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INTERNATIONAL



# MEDICAL MAGAZINE

A MONTHLY, DEVOTED TO

MEDICAL AND SURGICAL SCIENCE.

EDITED BY

JUDSON DALAND, M.D.,

INSTRUCTOR IN CLINICAL MEDICINE AND LECTURER ON PHYSICAL DIAGNOSIS AND SYMPTOMATOLOGY IN THE UNIVERSITY OF PENNSYLVANIA; ASSISTANT PHYSICIAN TO THE UNIVERSITY HOSPITAL; PHYSICIAN TO THE PHILADELPHIA HOSPITAL; PHYSICIAN TO THE RUSH HOSPITAL FOR CONSUMPTIVES, PHILADELPHIA.

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VOL. I.

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 WOOD, H. C., M.D., LL.D., Philadelphia, Pa.



# INTERNATIONAL MEDICAL MAGAZINE.

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## *ANNOUNCEMENT.*

WITH this the first number of the INTERNATIONAL MEDICAL MAGAZINE, a brief statement of what it is proposed to accomplish is appropriate. The need of a monthly journal whose dignified tone, liberal international spirit, and practical teachings shall clearly reflect the best thought and work of the medical world,—a journal which shall enable the busy practitioner to keep abreast with the rapid progress of every department of medicine,—has long been recognized.

Each number of the INTERNATIONAL MEDICAL MAGAZINE will contain more than one hundred pages, and will be made up of original contributions, clinical lectures, review of medicine, and book reviews. The enormous mass of contemporaneous medical literature will be carefully read, and contributions possessing real worth will be reviewed in a crisp and concise manner.

All important articles appearing in German, French, Italian, and Spanish medical periodicals, as well as in English, will receive careful attention in our magazine; and to facilitate this it has been found necessary to subdivide medicine into the following departments: THERAPEUTICS, MEDICINE, NEUROLOGY, PEDIATRICS, SURGERY, GENITO-URINARY SURGERY, ORTHOPÆDICS, GYNÆCOLOGY AND OBSTETRICS, OPHTHALMOLOGY, LARYNGOLOGY AND RHINOLOGY, DERMATOLOGY, PATHOLOGY, HYGIENE AND BACTERIOLOGY, and FORENSIC MEDICINE.

Each of these departments is in charge of one who, by his acknowledged skill and experience, has become eminent in his specialty.

The contributors of original matter and clinical lectures are men whose investigations and discoveries have had, and continue to exercise, a directive influence on the progress of the science of medicine, and whose achievements and triumphs, as teachers, authors, and practitioners, have placed them at the very head and front of their profession and have given them an



international fame. The list of those whose aid has either been secured or promised comprises the names of representative men from the leading medical schools of the United States, together with those of the best-known men of great medical centres abroad, such as London, Paris, Berlin, and Vienna.

By thus bringing together monthly, from all quarters of the medical world, what is settled as best, both in theory and in practice, the active physician is kept informed, at small cost, of all valuable additions to the knowledge and practice of his profession.

All important books will be carefully reviewed by men thoroughly familiar with the subjects treated of by the authors.

Each number will be illustrated with photographs or original drawings, wherever their presence will serve to explain the text and help the reader to a ready and accurate apprehension of the subject-matter.

The hearty commendation accorded by physicians to the efforts of the publishers in this direction in the past encourages them to spare neither money nor skill where illustrations will lighten the labor of the practitioner or add to the attractive appearance of the magazine.

A medico-legal department, dealing with the legal responsibilities incident to the practice of medicine and surgery, is a feature that must prove of interest and value to physicians.

J. B. LIPPINCOTT COMPANY.



# ORIGINAL COMMUNICATIONS.

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## A SERIES OF SIX SUCCESSFUL CASES OF DELAYED UNION AND UNUNITED FRACTURE.

BY J. WILLIAM WHITE, M.D.,

Professor of Clinical Surgery, University of Pennsylvania.

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CASES in which fractured bones fail to unite at the termination of the period which is ordinarily required for repair are conveniently divided, according to an old-fashioned but still useful and practical classification, into those of delayed or tardy union and those of non-union, ununited fracture, or pseudarthrosis. The cases which I desire to report represent, as it happens, the principal varieties of both of these classes.

The causes of delayed union are various. In the majority of cases which have come under my observation, the cause has been local and associated with either improper or insufficient dressing. Under the first head I would include faulty bandaging; under the latter, the use of splints or dressings which do not prevent motion between the fragments. It must be admitted, however, that a considerable percentage of cases of delayed union cannot thus be accounted for, and that we must expect occasionally to be disappointed when we come to examine our cases of fracture at the expiration of the usual period, even when the treatment has been *secundum artem*. We may occasionally in such instances find an explanation in the presence of some constitutional condition, but, as a rule, satisfactory evidence of the existence of this factor is wanting. Cancer, rheumatism, syphilis, anæmia, scrofula, and many other constitutional conditions have been credited with the prevention of bony union after fracture, but, as a rule, on insufficient evidence. It is not to be denied that the existence of any one of them in an aggravated form would exert an unfavorable influence upon all processes of repair, and the same is true even more commonly and positively as regards the acute infectious diseases; but these are exceptions, and, although the presence of a family history of phthisis or inflammatory rheumatism or carcinoma may now and then furnish valuable indications to the practitioner who meets with a case of this kind, or, still oftener, may serve as a possible explanation to the patient or his family, it is to be remembered that, as a rule, it has little bearing upon the case. As a matter of routine, I should advise the practitioner of surgery who meets with a case of delayed union in a person of average good health to inspect



carefully his own methods of dressing and to inquire into the nursing and general management of the case during the intervals of his visits.

These remarks apply with equal force to cases which have passed beyond the stage of delay of union into that of ununited fracture, in regard to which we also have other causes superadded. One of the most important factors in the occurrence of non-union is the interposition between the fragments of some portion of neighboring tissue, usually a strip of fascia, or a fragment of muscle torn and lacerated by the ends of the broken bone at the time of injury. This condition is practically constant in cases of fracture of the patella. When this occurs as a result of direct violence, a portion of the capsule is driven between the fragments by the same force which breaks the bone. When the fracture results from muscular action, as in consequence of a misstep, as soon as the fragments separate, atmospheric pressure forces in between them portions of capsule and fibrous tissue, and the same effect is manifest. This condition, which is, as I have said, almost unvarying in fractures of the patella, prevails occasionally with other bones, and is to a certain extent an explanation of the frequency with which certain of the bones of the skeleton fail to unite. In fracture of the humerus, for example, the close association of the fibres of the brachialis anticus with the lower portion of the shaft of the bone serves, in a measure, to explain the frequency of ununited fractures in this region, and a similar proximity of muscular tissue in fractures of the shaft of the femur has a similar effect. This is one of the causes of the fact that these two bones are more frequently than any others the seat of non-union. Next to them in order of frequency come the bones of the leg, and then, although at a considerable distance, the bones of the forearm. The foreign body interposed between the fractures may be introduced from without or may consist of a necrosed portion of the broken bone itself, as in ununited fracture of the inferior maxilla, where this condition is exceedingly common.

In attempting to overcome the failure to unite under any of these circumstances, some general rules are applicable. In the first place, the surgeon should begin with those methods which are simplest, least painful, and unattended with danger. Accordingly, vigorous friction of the ends of the fragments, followed by fixation, is the method to be adopted in all cases of delayed union and in all comparatively recent cases of non-union. It will often be successful in most unpromising conditions, involves no risk, and may not even require the administration of an anæsthetic, although this is usually desirable. If it fails in such a case, or if the case be one of non-union of some standing, it will sometimes be sufficient to employ an apparatus which will permit the patient to walk if the fracture is in the lower extremity, or to use the arm or forearm to a moderate extent, the irritation produced by frequent motion being often competent to bring about the formation of callus. This plan is especially successful in fractures of the lower extremity.

Passing beyond these conditions to those in which these methods have

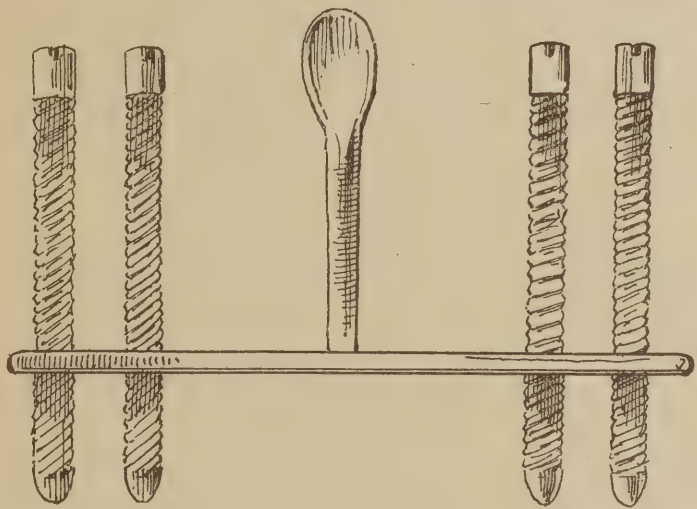


been tried and failed, the question of operative interference must be considered. Many measures have been employed to produce such a degree of irritation in the ends of the bone as would be followed by the exudation of lymph and the formation of callus in sufficient quantity to secure union. This for years has been attempted by means of a bone-drill, by the insertion of ivory or steel pegs, by the introduction of a seton, and by other methods having the same object in view. It is questionable whether in the majority of cases much is to be gained in this way. Cures have undoubtedly been effected by all these methods, and in the days when the dangers of open wounds were great the fact that they could be carried out subcutaneously was one of enormous practical importance, much of which it has now lost. They are certainly far more frequently followed by failure than by success, and should probably be abandoned in favor of free resection of the ends of the fractured bone, and their subsequent fixation either by suitable splints or by splints and some mechanical appliance in addition, such as a pin or gimlet passed directly through the fragments, a wire ligature applied through holes drilled in the ends of the bone, or, better, a metallic plate held in place by screws, as shown in Fig. 1. It must be remembered that in many

of these cases there is atrophy of the ends of the fragments, which become incrustated with a thick cartilaginous deposit, covered with tough organized lymph, and bound to neighboring parts by firm adhesions. In such a case it will sometimes be evident that a considerable portion of bone has absolutely disappeared by a process of absorption, or by means of caries and the formation of sinuses. In either condition it is obvious that nothing short of resection can by any possibility result in cure, and often it will be necessary to supplement this by the employment of some means of stimulating the bone to greater activity. These means may at the same time assist in the fixation of the fragments.

We have thus arranged in order the following methods of treatment, which at the present day seem worthy of a trial: 1. Manual friction followed by immobilization of the fragments. 2. The use of an apparatus permitting motion with the idea of securing the development of callus through irritation. 3. Fixation of the fragments by means of a steel or ivory pin. This applies only to those cases in which no foreign body inter-

FIG. 1.





venes between the ends of the bone or in which such body has been thoroughly removed. 4. Resection of the fragments and the subsequent application of proper splints retaining them in position. 5. Resection of the fragments and their retention by means of a metallic plate and screws, thus securing at once fixation and a certain amount of irritation to the ends. This applies to long-standing cases with marked atrophy of the extremities of the bones or in which there is considerable difficulty in immobilizing the fragments.

The use of a wire ligature has, so far as my observation extends, been extremely unsatisfactory, and the occasional good results which have followed its employment have been due to the freshening of the ends of the bone which preceded it and to the subsequent application of proper splints or other dressings, rather than to the wire itself. It is evident that, especially in large bones, the wire can have but little immobilizing influence, and that in the majority of cases it must soon loosen, when the position of the fragments will depend entirely upon the other appliances used, the wire becoming then simply a foreign body, which is often unnecessary and sometimes harmful. In addition, it should be remembered that its introduction and application usually greatly prolong the operation.

The following cases happen to illustrate most of these points; they all occurred in my own practice during the winter of 1890 and 1891, and the majority of them were followed throughout their course by portions of the University class. The first three are instances of delayed union: the others of ununited fracture.

CASE I.—L. B., a professional huntsman and dog-fancier, fractured his right clavicle in a fall on the hunting-field. It was dressed with adhesive plaster, strapping, and a sling, and was in a fairly good position when I first saw it, six weeks after the injury.

The patient had gone about, endeavoring to attend to a little work, and had undoubtedly used the arm too freely. By way of preventing this and at the same time bringing the fragments into the best position possible, I insisted upon his going to bed and lying supine on a hard mattress with a very small pillow beneath the head. The weight of the shoulder under these circumstances is, as has long been known, quite sufficient to reduce the deformity, and this treatment of fractured clavicle is perhaps the most satisfactory in its results as regards deformity, although it is also the most irksome to the patient. In this case, although no attempt at union had occurred under the previous dressing, repair proceeded steadily, and at the end of a month the fracture was firmly united.

This case illustrates very well the advantage of the simplest of all procedures in cases of delayed union,—viz., placing the fragments in good position and immobilizing them in that position.

CASE II.—L. Y., a boy, aged eleven, was admitted to the University Hospital with a fracture of the upper third of the right femur following an accident in which he had been run over by two wheels of a heavy wagon. He was put to bed and the usual dressing applied,—namely, that by adhesive strips, with a weight-and-pulley, and sand-bags. There were, at first, swelling and ecchymosis and great overlapping, but the shortening came down, in a few days, from three inches to three-quarters of an inch, the swelling disappeared, and the case ran apparently the usual course. At

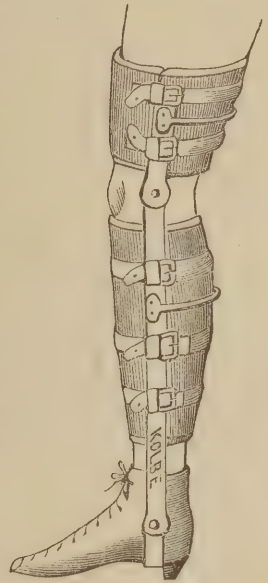


the end of six weeks I removed the weight and sand-bags and tested the limb, but found distinct, though limited, motion between the fragments. I made friction with a moderate degree of force, and reapplied the dressing, but four weeks later there was no indication of improvement. I then etherized the lad, and made vigorous friction, completely separating the bond of union which had imperfectly united the fragments, and then again put him in bed, with a weight-and-pulley and sand-bag dressing. Six weeks later union was solid and complete.

This was a healthy boy, with a good personal and family history, and with no intercurrent disease. He was treated by methods which almost uniformly result successfully in fractures of the femur. There was no evidence that there had been any undue amount of motion allowed during the treatment, and it appeared possible that the cause of the delay had been the interposition of some fragment of tissue, which was not displaced by my first moderate efforts, but which was gotten rid of during the second and more forcible friction which I applied.

CASE III.—I was called by Dr. Hough to see Mr. W. S., an employé of the Philadelphia and Reading Railroad. He had sustained a fracture of the left tibia two months previously. It had been dressed with plaster at first, but later, this having been removed on account of the discomfort it gave rise to, the limb had been placed in a fracture-box. There was little attempt at union, motion between the two fragments being limited only by the fibula, which acted as a splint. There was but little displacement, however, and no pain or tenderness. Friction had already been tried unsuccessfully. I recommended an apparatus such as is shown in Fig. 2, by which he could get about at once, walking with the aid of a crutch or cane. He did this, and in the course of six weeks the union was perfect.

FIG. 2.



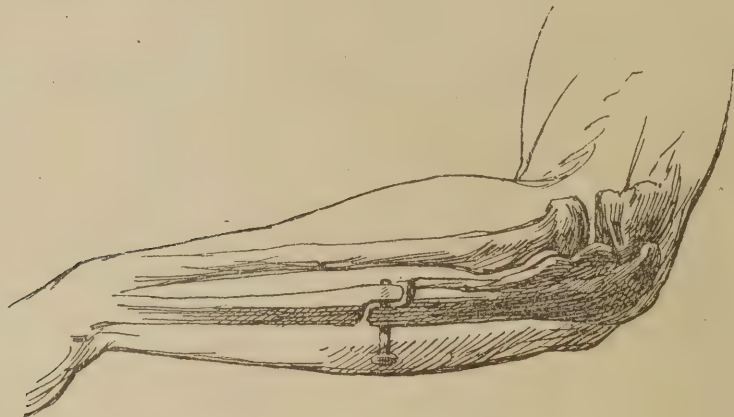
These three cases illustrate the three different grades of non-operative interference in delayed union. In the first, immobilization was sufficient; in the second, immobilization after vigorous manual friction; and in the third, continual irritation was necessary to bring about reparative action.

In the remaining three cases operation was clearly indicated.

CASE IV.—An employé of the Pennsylvania Railroad, sent to me by Dr. Samuel Latta, had an ununited fracture at the junction of the upper and middle third of the left ulna. He had been treated for some months. Motion with crepitus was very perceptible. Frictions followed by the application of splints had been tried, but with no result. I made a free incision over the shaft of the bone, extending it for three inches above and below the seat of fracture. The soft parts were separated by means of a few touches of the knife aided by a periosteal elevator. The fracture was exposed, and it was then apparent that the ends of the fragments were separated by but a moderate interval, and were in such favorable position, owing to the S-shaped line of fracture (see Fig. 3), that they could probably be fastened successfully by means of a single pin carried through both of them. The narrow space between them was filled with tough organized lymph, which I carefully removed by means of a delicate chisel, leaving the shape of the line of fracture unaltered. I then drilled the two bones from the ulnar towards the radial side, and inserted a screw slightly larger than the drill, so that the edges of the thread took a good hold upon the bone. The end was left projecting a little beyond the wound of the soft parts. A double cyanide

dressing was applied, after which the arm was put in an ordinary sling. There was no inflammatory reaction. The screw was left in place for one month, and was then easily removed; the fistulous tract which it left disappeared by granulation in about a week, and the bone was found to have united solidly.

FIG. 3.



It is possible that in this case the mere freshening of the bone and the application of suitable splints would have been equally satisfactory, but I do not think that we should undervalue the effect of a reasonable amount of irritation in such cases, especially when, as in this one, no attempt at repair has apparently been made. The utility of the screw in securing fixation is also far beyond that of a wire ligature, or a smooth bone or ivory peg.

CASE V.—Miss J., a young lady, nineteen years of age, was sent to me by Dr. Diefenderfer, of Pittsburg. About eighteen months previously, while attending school in a New England State, she had fallen down an elevator and fractured her right humerus about two inches below the tip of the acromion. The fracture was compound. She was treated by the application of an internal angular splint, but no union was secured. An attempt was made to set up irritation by friction and a splint was reapplied, but without success. The physician in attendance then cut down through the scar of the healed wound and curetted the ends of the bone; but, although union of the wound was secured, there was no alteration in the great mobility and equally great uselessness of the arm. She then came to Philadelphia, where she was operated upon again. An incision was made on the outer side of the arm through the deltoid, the ends of the bone were freshened and drilled, and a wire ligature was inserted. The only effect of this operation was to leave her with an infected sinus communicating with the seat of fracture and persistently discharging offensive pus. In this condition she was brought to me by Dr. Diefenderfer, and I operated soon after.

FIG. 4.



Upon cutting down upon the fragments I found the ends of the bones in the condition shown in Fig. 4. I freshened them by means of a chisel and metacarpal saw, so that I had two long, oblique, overlapping raw surfaces. I then drilled them from without inward and inserted a long screw, which at the time held them perfectly in position. They were eburnated and non-vascular, bleeding only slightly at the planes of section, but I hoped that the irritation caused by the screw would set up some activity which would be the starting-point of a regenerative process. At the time of its insertion and for long afterwards it held the bone firmly in place, the arm moving as one piece, but in about three weeks it loosened and was removed. The wound which it left was dressed daily without disturbance of the fragments, and the case was treated as though it were one of



compound fracture. At the end of six weeks it was found, however, that the only beneficial result of this operation was a closure of the sinus which had previously existed, the arm itself being as flail-like as ever. It seemed wrong to give up the hope of securing union in such a case in a young and otherwise healthy girl, and in so important a limb as the right upper extremity, and I therefore suggested another attempt, which was promptly acceded to by the patient.

On this occasion I reopened the soft parts in the line of the old cicatrix, splitting the deltoid muscle and coming down upon the bone, which was but little changed in appearance. There was no evidence of any attempt at the formation of callus. I freed both ends of the fragments, stripped back the sound parts by means of a periosteal elevator, and sawed off the narrowed and withered ends of the fragments at a level where I thought it probable I would reach sound bone. I took off additional sections, however, from each end, as the first showed the same eburnated and almost bloodless condition. Then assuring myself that they came accurately together, I bored four holes at distances of three-eighths of an inch from each other and half an inch from the line of fracture. These corresponded with the openings in the metallic plate, the dimensions of which were as shown in Fig. 1. It was an inch in width. This was applied in a line with these openings and four screws were inserted, holding the plate and the fragments firmly in apposition. The thread of the screw was received in a similar thread in the inner surface of the apertures through the metal plate. The awl with which the bone was drilled was slightly smaller in diameter than the screws themselves. In this way a firm hold of the screws upon the plate was secured without the necessity of sending them in to their full length, and at the same time a good hold upon the bone was also obtained. The metallic plate was provided with a central handle, intended to steady it during its application and to aid in its final withdrawal. This proved to be the least essential part of the apparatus, although quite unobjectionable. When the plate was finally in position (as shown in Fig. 5), the humerus moved as one piece, with the same solidity as the bone upon the opposite side. The wound was united by deep sutures, and the arm was bound to the side of the chest, a folded towel being interposed. Some slight discharge followed this operation, finding its way from the central portion of the wound by the side of the handle of the metallic plate, which thus served a useful purpose as a drain. This discharge was at no time extensive and soon greatly diminished. The wound throughout the most of its length united by first intention. Dressing was infrequent, and the arm was kept absolutely immobile for seven weeks. At the end of that time all evidences of the presence of the plate had disappeared, with the exception of a slight projection of the handle from the centre of the scar, surrounded by a little granulating area. The patient was etherized, the wound again reopened, the screws, three of which still retained a moderately firm hold upon the bone, were carefully withdrawn, and the plate itself was then taken away. The wound was approximated by interrupted sutures, a small strip of iodoform gauze being left in the centre for drainage. No attempt was made at this time to ascertain the condition of the fragments, although no motion was observed during the manipulation necessary for the withdrawal of the plate. At the expiration of ten days union throughout the wound was complete, and a careful examination was then made which showed that the bones were also solidly united. The young lady has since

FIG. 5.



then picked up and carried around my office a heavy old-fashioned oaken chair without the least difficulty or pain.

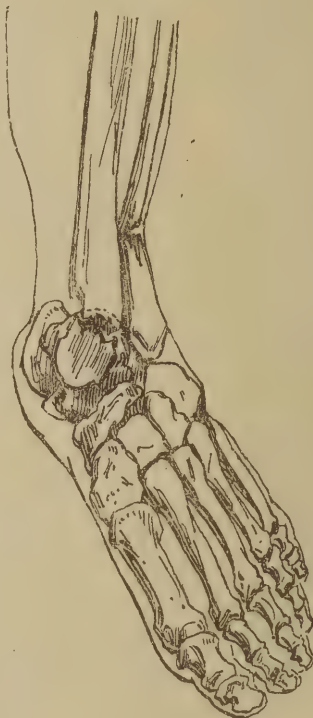
I suppose there is a possibility that I might have secured this result by the resection alone, followed by the employment of immobilization by means of splints and bandages, but I do not believe that I could have done so, and I am disposed to give much credit to the metallic plate and screws, both for the absolute and perfect apposition of the fragments which they secured and maintained, and for the necessary stimulus which they furnished to the inactive and atrophied bone with which I had to deal.

CASE VI.—Mr. J. was brought to me by Dr. Shelly, of Ambler, under whose care he had come nine months after he had sustained an injury of the left leg just above the ankle, the result of sliding from a height suddenly and alighting upon his feet. He had the characteristic eversion of Pott's fracture, which was increasing from attempts to walk. Examination showed an absence of the internal malleolus from its proper position, and a large prominence over the front of the astragalus just below the articular surface of the tibia. There were crepitus and preternatural mobility in the fibula about three inches above the external malleolus, and at this point there was a marked and unnatural angle in the outline of the limb. (Figs. 6

FIG. 6.



FIG. 7.



and 7.) In view of the helpless condition of the foot and the increasing disability, I recommended operative interference, and a few days later performed the following operation:

A vertical incision was made from the inner edge of the tibia, extending from about two inches above the ankle to the tuberosity of the scaphoid. The soft parts were drawn aside with retractors and carefully dissected loose. The mass which occupied the front of the ankle was found to be the internal malleolus surrounded by partially-organized and irregular masses of callus. Some periosteal attachments connecting it with the inner surface of the tibia were found to be intact and were allowed to remain. The piece of bone was chiselled loose, and a fresh surface was prepared at the lower and inner aspect of the portion of the malleolus which had remained *in situ* continuous with the shaft of the tibia. The bone was brought



back to its normal position, and was held in place by two wires passed through holes drilled through the lower end of the tibia and the malleolar fragment. A quantity of callus which intervened between the inner and upper surface of the astragalus and the malleolus was then chiselled away, permitting for the first time a

FIG. 8.



FIG. 9.



slight straightening of the foot. A vertical incision six inches in length was then made in the line of the fibula, having the point of fracture as its centre. The lower fragment was found to be held strongly in towards the tibia by bands of lymph, and the space between the fibula and tibia beneath that level was also filled with what appeared to be callus. Considerable dissection and the free use of the chisel were required before the fragment could be brought out so that it would be in a line with the upper one, but when it was entirely freed it was found possible to bring the foot back to its proper position and to secure an almost normal relation of all the parts involved. Drainage-tubes were then inserted, and the foot was placed in a fracture-box and held firmly in position by careful padding. The case ran an afebrile course; the larger portion of the wounds healed by first intention; the tracks of the drainage-tubes, which were not withdrawn for two weeks, healed by granulation, and the patient was allowed to go about with a plaster dressing on at the end of six weeks. The present position of the foot from various points of view is shown in Figs. 8, 9, and 10. The result is thoroughly satisfactory. The eversion has disappeared; the patient walks with ease with a cane, and is even getting considerable motion in the ankle-joint, a result which I had told him before the operation he could scarcely hope for.

FIG. 10.



I know of but one similar case which has been operated upon, and that was in the service of Sir Joseph Lister, at King's College Hospital, London. I do not know that it has been reported. I did not see the operation myself, but was present at

a subsequent dressing, and had the steps of the operation explained to me by Lister. In that case there had been no fracture of the internal malleolus.

I am not certain that the attempt to remedy by operation the deformity which sometimes follows Pott's fracture would often be justifiable, but where it is complicated with ununited fracture, is positively crippling in its extent, and moreover is increasing at every attempt to use the limb, it would seem that even so grave an operation as the one we have described would be admissible. So far as one case can go, the result in this instance has certainly justified it.

This completes the second half of my series of cases,—viz., those of ununited fracture. The first one was a typical case for the use of the single pin or a screw, owing to the peculiar line of fracture which existed and which prevented much displacement. The second seems to me full of interest as showing the possibility of overcoming both mechanical and physiological difficulties, such as the previous failures had shown undoubtedly to exist. The last case was perhaps the most complicated and the most difficult, but is equally instructive as an example of what antiseptic surgery has enabled us to do with impunity in cases of deformity and non-union following fracture.

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## *LAPAROTOMY FOR PERFORATING ROUND ULCER OF THE STOMACH.*

BY ROBERT F. WEIR, M.D.,

Professor of Clinical Surgery, College of Physicians and Surgeons, New York; Attending Surgeon, New York Hospital.

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THE advance of surgery is nowhere more marked than in the treatment of what is becoming a somewhat obsolete disease,—peritonitis,—the word now meaning only a symptom, and the cause of the disease displacing the older term. It is in this way that salpingitis and its complications have done away with the pelvic peritonitis and cellulitis of our student days. Likewise appendicitis, of the perforative, gangrenous, or even catarrhal forms, together with ulcerations, etc., of the gall-bladder, afford a starting-point for a large proportion of the formerly obscure peritoneal inflammations. Surgeons have lately added another lesion to those already mentioned as a generator of peritonitis. I refer to perforating gastric ulcerations. Though the old-fashioned round ulcer of the stomach is regarded (and properly so) as amenable, generally, to medical treatment, yet a sufficient amount of clinical experience has been gathered to show that, when the symptom of hemorrhage presents itself in any given case, cause for anxiety, lest a perforation should take place, fairly arises.



Of the ordinary run of cases of gastric ulcers the latest writers (Saunby and McCall Anderson) give a mortality of about one in twenty cases, but this does not bear so well on the point of importance,—hemorrhage or perforation. Müller's collection of one hundred and twenty cases shows that in these hemorrhage occurred thirty-seven times, of which fourteen were fatal. The reason for this is mainly an anatomical one, the larger vessels being situated in the peritoneal coat, which being reached, not only is the accident of bleeding more disastrous, but the possibility of a final perforation is more marked. But it must be admitted that severe hemorrhages can also occur from venous perforations, and also from comparatively small arterial branches less deeply situated. Hence one is not yet in the condition to speak strongly as to surgical measures based on the point of hemorrhage alone, save in exceptional cases. Mikulicz, for instance, in a severe gastric hemorrhage without tumor, did a laparotomy, opened the stomach, found a pyloric ulcer partly cicatrized, scraped this, and saved his patient. This form of ulcer,—the pyloric,—which occurs in about fifteen per cent. of all gastric ulcerations, with its consequent stenosis, has now an accepted place in surgery, and the reason for operative interference is mainly the stenosis that it produces. Its further consideration will, therefore, not be entertained in this paper.

But for the perforations that occur from ulcerative action elsewhere in the stomach, a few minutes' further consideration is necessary. They are usually found single in character, though as many as five have been reported in one patient, and are said, in the text-books of the day, to be situated along the lesser curvature of the organ, and more commonly in the posterior than in the anterior wall. The nearness to the lesser curvature is an important point for anatomical reasons, for when perforation occurs here it is more likely to be limited by adhesions to the adjacent organs, such as to the diaphragm, the liver, or, if posteriorly, to the spleen or pancreas, depending upon whether it is near the pyloric or cardiac orifice. In these localities sometimes nature's efforts are effectual in closing off the ulcer, or, if this does not take place, one may hope for a slowly-increasing encysted or limited peritonitis before the barrier is eventually burst apart, and, as under similar conditions in an appendicitis, a general peritonitis is set up.

Besides these localities there are two that are fraught with more danger and are clouded with misleading symptoms of importance. Posteriorly an ulcer may penetrate to the loose connective tissue overlying the kidney or the spleen where it is only partially covered by peritoneum, and there establish a collection of stomach-contents, fluid and gaseous, commingled with blood or pus, or both, and simulating in a strong degree a pneumothorax, all the conditions of succussion being here produced. While these food-abscesses may be found outside the peritoneum in this region, they can also be formed behind the stomach, within the peritoneal membrane (in the lesser cavity of the peritoneum). Their symptoms will not specially differ, and only at an autopsy is the differentiation of these two forms to be made.

These varieties are well shown in the instances presented by Dickenson.<sup>1</sup> His first case occurred in a young woman of twenty-four, with a history of peritonitis supposed to be due to perforation of the stomach. Besides the peritonitis there was considerable disturbance of the circulation and respiration. The heart's action was forcible, and friction-sounds, supposed to be due to pericarditis, were plainly audible along the right border of the sternum from the third to the fifth costal cartilage. Moreover, there was tenderness along the whole præcordium. Pleural friction-sounds were heard in the left axilla. After being in the hospital about ten days, the patient was attacked with diphtheria and died. At the necropsy a perforating ulcer of the posterior wall of the stomach was found, which had caused peritonitis, almost restricted to the left half of the diaphragm and the upper surface of the left lobe of the liver. A layer of soft lymph coated the lower part of the left pleura. There was no trace of pericarditis. Between the liver and the diaphragm was an abscess pushing up the left leaflet of this muscle some distance. This, with the pleurisy, was thought to have produced the supposed pericardial sounds.

His second case was one of gastric perforation with supposed pneumothorax, in a girl of eighteen, who was admitted to St. George's Hospital with signs of pneumonia at the left base of the lung and a history of gastric ulcer. Later, signs of involvement of the right lung in a pneumonic process showed themselves. In the course of three weeks there was a return of the fever with serious symptoms. A careful examination of the chest showed that the right lung had returned to its normal state, but that on the left side just above the spleen pure amphoric breathing was audible, and a perfect bell-note could be obtained by percussion with a couple of coins. At the posterior base there was evidence of some effusion of fluid. These physical signs varied little from day to day, but those especially characteristic of pneumothorax were always present. Many rigors occurred, and the patient died six weeks after admission, her ordinary gastric symptoms having been in abeyance throughout. At the autopsy there was no pneumothorax. The lower lobe of the left lung was partially compressed by a small effusion of turbid fluid into the left pleura. An abscess-cavity was found, containing air and pus, between the diaphragm, the spleen, and the upper surface of the left lobe of the liver. Opening into the abscess was a small perforating ulcer on the anterior wall of the stomach near the cardiac end. There was also a ragged abscess in the substance of the spleen which communicated with that beneath the diaphragm. Concerning this splenic complication, Gerhardt<sup>2</sup> cites three cases where it had been produced by a like cause.

A case similar to the foregoing is given by Debove in his interesting collection of some thirteen cases of gaseous abscesses due to gastric perforation.<sup>3</sup> It is quoted in a condensed form as follows: A woman, aged thirty-nine, whose gastric symptoms, of considerable duration, yielded to proper treatment, had, four days previous to her admission into the hospital, a relapse of her symptoms from alcoholic abuse, with intense abdominal pain accompanied by a sense of suffocation. Anteriorly and posteriorly on the left side tympanites marked on percussion up to the angle of the scapula, with amphoric breathing and metallic tinkling. Death at the end of four days. Autopsy showed no thoracic implication, but a subdiaphragmatic abscess, containing air and pus, communicating with two perforations in the anterior wall of the stomach. In another of Debove's cases (and his article generally well repays reading, both to the physician and the surgeon) a tympanitic tumor was met with over the left lobe of the liver, which was first aspirated with the result of extracting gas and

<sup>1</sup> Misleading Signs of Ulcer of the Stomach, *Lancet*, 1891, vol. i. p. 541.

<sup>2</sup> *Deutsche Medicinische Wochenschrift*, No. 18, 1888.

<sup>3</sup> Des abcès gazeux sous-diaphragmatique par perforations des ulcères de l'estomac, *Gazette des Hôpitaux*, 1890, p. 1159.



pus. It was then incised, and proved to be a subdiaphragmatic abscess due to perforating ulcer of the stomach, of which the patient had had marked symptoms. A cure resulted without further surgical interference.

The discrimination between a pyo-pneumothorax and such subdiaphragmatic abscesses, containing air and presenting the signs of amphoric breathing with a succussion note, is not an easy one. It seems, however, that by an aspiration puncture of the cavity one could possibly learn *two* things that might clear up the diagnosis. They are (1) that thereby the level of the diaphragm would descend if it were a subdiaphragmatic gaseous abscess, and this could best be determined by noting before the puncture the line of the liver or the lowest line of respiratory murmur. This is doubtless more available on the right side, from the presence of the liver, than on the left side, though the frequency of these abscesses is greater on the left side. For in all the cases presented by Debove, nineteen in number, in the thirteen due to perforation of the body of the stomach the air-abscess, or pseudo-pneumothorax, showed itself on the left side, and in six other instances, where the perforation existed either at the cardiac or pyloric orifice (in each location one case) or in the duodenum (four instances), the subdiaphragmatic air-abscess showed itself in the right side. This is worthy of being kept in mind in considering these cases. (2) The same puncture, if made with a needle of some size, would also develop a sign of value. Pfuhl<sup>1</sup> punctured such an abscess and attached to the canula a manometer, and found that the pressure was inverse to that met with in the thorax in pneumothorax,—that is to say, the pressure was increased in inspiration and lessened in expiration. As a manometer is not always applicable, the flame of a match or a candle held over the outlet of the canula will, I judge, render this practical test of instant application in the future, and I therefore beg to call attention to it. Or to the canula could be attached a short rubber tube, which, carried under water,—say, in a basin or a tumbler,—would show by the bubbles poured forth this inversion of pressure.

In yet another way help may be obtained, but it is more theoretical in character. It is based on the thought that an opening large enough to allow escape of its contents from the stomach might also permit the acidity of the stomach secretions to appear in the pus that might be extracted. Hence the presence of hydrochloric acid by its usual test might aid the diagnosis. From the foregoing consideration, one is fully justified in stating strongly that left-sided pneumothorax with previously existing gastric symptoms should always lead to the suspicion of a perforation of the stomach.

The collections of pus, alone or mixed with air or food, may present themselves in other localities. Goldenburg<sup>2</sup> has reported an interesting case where obscure symptoms of a perforating gastric ulcer supervened after

<sup>1</sup> Berlin. Klinische Wochenschrift, 1877, p. 57.

<sup>2</sup> International Klinische Rundschau, 1891, v. p. 223.

a hearty meal, with vomiting, diarrhoea, epigastric pain, and abdominal distention, and where, at the autopsy, in addition to a general peritonitis, the stomach was found collapsed and adherent along the lesser curvature to the liver. The lesser peritoneal cavity was filled with pus, due to a perforation of the posterior wall of the stomach the size of a ten-cent piece.

The other spot where it is anatomically more dangerous for a perforation to take place is well on the anterior surface of the stomach. Here it is where the most motion of the organ exists and where no solid viscera are opposed to it. Hence in this locality it may be expected that a perforation will promptly be followed by a general peritonitis of rapid progress, with a diminution of the liver-dulness, and, at the operation or autopsy, the escape of usually inodorous gas will be observed, but only exceptionally, as the perforations are commonly small in size, and food is therefore not often found in the peritoneal cavity. This result—viz., a general peritonitis—a number of carefully-considered autopsies has confirmed; in an unknown but small percentage of cases, however, an encysted peritonitis permits the accumulation similar to that referred to as occurring posteriorly. The ensuing case reported by Fitz<sup>1</sup> illustrates the more fortunate condition that may result from such a perforation in the anterior wall.

A woman, aged forty-one, eighteen hours before admission to the hospital, was seized with severe pain in the epigastrium. She had had for a month previously severe gastric pains of an irregular character with eructations and water-brash. There was no report of hemorrhage. The abdomen was moderately tympanitic and the hepatic dulness was absent; no localized tenderness. A perforating gastric ulcer was diagnosed and laparotomy was advised, but this was declined by the patient. On the fifth day tenderness in the splenic region was recognized and the epigastrium became more swollen and tympanitic, finally transmitting in this region an aortic pulsation to palpation. The patient died on the fifteenth day. The necropsy showed an abscess shut off from the general peritoneal cavity, bounded above by the suspensory ligament, spleen, diaphragm, and left lobe of the liver, containing gas and two pints of fluid. Elsewhere the peritoneal cavity was normal. On the anterior wall of the stomach, near the lesser curvature, was a minute perforation at the base of an ulcer which, on the mucous surface, was the size of a finger-nail. Some adhesions had partially glued the ulcer to the liver.

Crouse<sup>2</sup> published an instance where the progressing symptoms of gastric ulcer had shown themselves in a rather intermitting manner; there was noticed a slowly-developing tumor above the umbilicus, which eventually discharged pus freely. The patient died eight weeks later from inanition, due largely, it would seem, to the escape of the stomach-contents through the fistula. An ulcer perforating the stomach-walls two and a half inches above the pylorus and two inches in diameter was found leading to the fistula at the umbilicus.

I ask attention to this case in connection with the point of nutrition,

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<sup>1</sup> Boston Medical and Surgical Journal, 1890, p. 583.

<sup>2</sup> Albany Medical Annals, 1889, p. 197.



which should have determined, had the patient's condition permitted it, some surgical interference,—either an endeavor to close the ulcer in the stomach, or, this failing, a resort to covering the same by a gastro-enterostomy or to the performance of a jejunostomy.

The possibility of an abscess of stomachal origin evacuating itself into the intestine must be conceded in the case reported by Barton.<sup>1</sup> In his patient the signs of gastric ulcer were well marked, and the onset of peritoneal symptoms was so decided that, when the improvement followed on the sixth day with a coincident purulent offensive discharge of the bowels, the proposed cause must be accepted as correct.

Earlier in these notes a reference was made to the older view that gastric perforations were more commonly encountered on the posterior wall of the organ. At the present enumeration of the effects of such perforations anteriorly, I wish now to call attention to the examination made by Struve<sup>2</sup> relative to this point. This observer, in his investigations to arrive at the accuracy of the statement made, that vomiting ceased when perforation of the stomach took place,—and which, by the way, he found to be true mainly where the perforation was a large one,—passed under review, in detail, forty-two cases of gastric perforations, with vomiting in sixty-six per cent. Of surgical interest, however, is the fact that in these forty-two cases perforation occurred twenty-one times in the anterior wall, thirteen times in the lesser curvature, and only twice in the posterior wall.

Nothing further need be said in entering on the consideration of the surgical treatment of such cases. A review of the cases presented in the last two years in our medical literature has impressed me with the fact that the number of deaths from peritonitis due to gastric perforation is much larger than is generally supposed, and it is not difficult to find cases, published and unpublished, to show how little the possibility of the cause is present in the minds of surgeons. Frequently it is only at the autopsy that it is revealed.

A woman, aged eighteen, with an imperfect history of gastric ailments, and while in fair health, was suddenly (July 27, 1891) seized with severe pain, referred to umbilicus, and vomiting (character unknown). Prostration became marked, and in a few hours the whole abdomen became exquisitely sensitive. No chill. Had had slight diarrhœa for a few days previous. July 30, 1891 (fourth day of disease), she was admitted to St. Luke's Hospital.

Abdomen distended, very tender; palpation impossible. Area of flatness in right iliac region and in corresponding flank. Left fossa and flank dull; facies good; general condition fair. Pulse 148, respiration 26, temperature 100° F.

Vaginal examination showed a soft, baggy swelling to the right of the cervix, not tender. At 5 P.M. median laparotomy was done by Dr. F. M. Markoe, who has kindly given me the notes of the case. General peritonitis; moderate quantity of odorless, purulent serum; intestines covered with lymph. Appendix normal; uterus and ap-

<sup>1</sup> Medical Press and Circular, 1890, p. 453.

<sup>2</sup> Struve, I. *Symptomatologie der Perforations peritonites im Gefolge des Ulcus ventriculi perforans*, 1890.

pendages surrounded with inflammatory exudate, most marked about the right tube and ovary, and the fossa filled with pus. The appendix being excluded, and the intensity of the process being limited, apparently, to the pelvis, all inflammatory signs decreasing as the upper part of the wound was explored, it was thought that the starting-point was in the right tube, and both tubes and ovaries were removed. Thorough irrigation with warm Thiersch's solution. Death twenty-four hours later.

Autopsy revealed a perforated ulcer on posterior wall of stomach near lesser curvature and midway between the two orifices. A second ulcer at a corresponding point on anterior surface was found covered by little else than the serous coat. Small amount of turbid serum in cavity.

Microscopic examination of both ovaries and tubes showed evidences of inflammation in their substance and much exudate on their surfaces.

We have all been educated up to the point, in those cases where a previous history is not obtainable or is an obscure one, that in a peritonitis, an operation having been determined upon and a median incision made, the first point to be quickly examined by the exploring fingers is the appendix; then, if in a woman, the tubes are looked after. Lately I have found, as a result of several cases of perforative ulceration of the gall-bladder that have simulated perityphlitic abscess, that it is then wise to pass the hand upward to the liver. Failing that, the region of the stomach should be explored by touch at least, and, preferably, by sight. This latter necessitates the enlargement of the incision. In one instance of supposed gastric perforation in which a laparotomy was performed, the exhaustion of my patient forbade the completion of the examination. This must occur in many cases, but I trust that the appreciation of the facts that I have gathered will (as I confess they have much enlightened me on this subject) enable one more clearly to recognize the conditions pointing towards this generating lesion of a circumscribed or general peritonitis.

The second case that came under my notice, and in which I was able to detect and to act with surgical propriety, though without success in its outcome, is the following one:

Kate G., aged fifty-seven, was admitted into the New York Hospital, January 18, 1891, with the history that for some time previously she had had occasional attacks of vomiting and pain in the stomach. She had never seen any blood in the matter thrown up. Four days previously she was seized with a severe pain in the belly, with an accompanying chill. The abdominal cramps were continuous and associated with much prostration and continued vomiting of spinach-green fluid. When examined, on admission, she was found with a feeble pulse of 100, temperature 100° F.; surface perspiring, and face anxious. The abdomen was tensely swollen and tender all over, and especially so at the epigastrium. The right iliac fossa and hypogastrium were dull on percussion. A hypodermic needle drew out no pus when inserted in two or three localities over the belly. The diagnosis inclined to a general peritonitis of appendical origin, and, though her condition was bad, an attempt to relieve her was deemed to be advisable.

After rectal stimulation with hot water and whiskey, a four-inch incision was made from the umbilicus downward, and, on opening the peritoneum, the presenting intestines were found glued together with fresh lymph (far more encouraging than if free pus had been found, according to my experience). No air or gas was present.



On passing in the fingers for exploring the cæcum and appendix, which were normal, and afterwards the ovaries and tubes, also normal, the whole hand was crowded under the abdominal wall towards the liver and its gall-bladder found undistended and of natural size and shape. The exploration was then carried to the stomach, and some soft adhesions were felt to yield, admitting one to a cavity, at the bottom of which the finger-tip recognized a circular opening, taken to be a perforating ulcer of the stomach. With the finger retained *in situ* as a plug, the abdominal incision was rapidly enlarged upward to the ensiform cartilage, and, on pulling open this wound, a free exposure of the lesion was obtained. A round ulcer, with smooth, hard edges, was seen in the middle of the anterior surface of the stomach, half an inch in diameter and near the lesser curvature. This opening was partially adherent to the liver, but was also in communication with an abscess-cavity of considerable size, with soft, yielding walls, through which my exploring fingers had readily torn, and which by its yielding four days previously had caused general peritonitis. This abscess contained six or eight ounces of a gruel-like pus, some of which undoubtedly was partially-digested milk from the stomach. Clearing this away, the edges of the opening were sewn together with fine black silk, and this was supplemented by two rows of Lembert's sutures. The abdomen was flushed with warm Thiersch's solution (boracic and salicylic acids) and the wound closed. The collapse was extreme, and from this the patient did not recover, dying soon after the operation.

The facts relative to the previous gastric symptoms, I should mention, were not obtained until afterwards. They were too vague, even if earlier received, to have determined the site of the perforation. Here the dulness in the right iliac fossa, where no tumor was found, but only intestines matted together by recent lymph, caused the first exploration to be there made.

This unfortunate result has been paralleled by other surgeons. I do not pretend to have thoroughly traversed the reports of laparotomy for this lesion, but the ensuing cases of operative procedures undertaken for gastric ulcer will, I trust, be of service to surgeons, as, to my surprise, but little has been gathered concerning this point in the journals of our vernacular.

CASE I.—Mouisset,<sup>1</sup> in 1890, did laparotomy for a perforating ulcer of the stomach in a man thirty-four years of age, who had daily vomiting (never of blood) for some time previously, but whose symptoms were thought to be explained by his alcoholic habits, and who was seized one morning, after taking a cup of coffee, with violent epigastric pain but *no vomiting*. The next day the abdomen was tense and there were the usual signs of acute peritonitis. Operation (immediate) revealed a round perforation of the stomach in the anterior wall near the lesser curvature, equal in size to a five-centime piece. Attempts to suture the opening failed from the brittle character of the walls of the ulcer, and the patient died at the end of the operation. No autopsy.

CASE II.—Nissen,<sup>2</sup> who has lately given a *résumé* on this subject, publishes a case wherein, for a perforating gastric ulcer, laparotomy was done, and in which a failure to reach the lesion occurred.

A man, aged forty-six years, had signs of gastric ulcer for two years, with latterly very severe pain and occasionally bloody stools. No tumor could be felt in the abdomen. Vomiting became more persistent September 10, 1889. Longer-continued

<sup>1</sup> Lyon Médicale, 1890, p. 516.

<sup>2</sup> Zur Frage der Indication der operativ Behandlung der runden Magengeschwürs, St. Petersburg Medicinsche Wochenschrift, October 20, 1890.

and severer pain in epigastrium with gradually-increasing distention of the whole abdomen and a slight epigastric pulsation with a sense of fluctuation in the flanks. The liver-dulness was diminished. Tympanitic note in right side up to sixth intercostal space. In the hypogastrium and in left lumbar region and left hypochondrium there was dulness on percussion, which changed with the position of the patient. Succussion-note could also be elicited in the abdominal cavity. A perforating ulcer of the stomach was diagnosticated and a laparotomy performed the same day by Van Wahl through an incision reaching from the xiphoid process to the navel in the median line. On opening the abdominal cavity a quantity of yellow, clear secretion escaped. Free gas was, however, not recognized. The stomach projected into the wound and nothing was found on its anterior wall. The posterior wall was palpated through the intervening gastro-colic omentum without tearing through it. This proved to be an error in the technique, for nothing was detected by the examination. The posterior wall appeared to be normal, and nothing wrong in the neighborhood of the stomach was found. The wound was closed without discovering the cause of the commencing peritonitis. The next day the patient had a sharp vomiting of blood. He recovered from the operation without further inflammatory developments, but with persistence of his gastric pains, vomitings, etc., until one month later, when death occurred with some signs showing progressing peritonitis. Free gas in the abdominal cavity was met with at the autopsy, which separated the liver from the diaphragm. The left lobe of the liver was glued to the stomach tightly by adhesions; on loosening these there was seen on the anterior wall a perforation of the stomach about one centimetre in diameter. Through this the contents of the stomach easily escaped. The stomach was generally contracted and formed a half-circular canal which passed off from the cardiac end with a sharp kink. The ulcer, when exactly noted, was situated on the anterior curvature, and its posterior portion opened into the retroperitoneal cellular tissue, while anteriorly it combed over the curvature, where it presented in front and adhered to the liver after setting up a fibrino-serous peritonitis.

Nissen comments on the uncertainty of finding out, by digital exploration alone, the locality of an ulcer supposed to have perforated, and says that the stomach should be inspected front and back as well as palpated. In this advice he is correct, and it is done best by making a good-sized hole in the gastro-colic omentum, nearer the stomach than the bowel, and examining in this way the whole posterior wall. If this failed I should not hesitate to make a direct cut of large size into the stomach itself and examine thus for the ulcer.

CASE III.—Laparotomy by Czerny,<sup>1</sup> in 1885, for perforating gastric ulcer. The patient, a woman of twenty, with a previous history of gastric difficulty, five days before admission to the hospital, suffered, without warning, severe pain in the left side of the abdomen radiating to the left breast. The next day the abdomen was distended, very tender, but no vomiting. General condition bad. Pulse 120. Respiration 60. Tympanitic left lumbar region with increased tenderness there. Liver-dulness not present. Diagnosis: Gas collection in peritoneal cavity from perforation. Immediate laparotomy resorted to. Incision with umbilicus as its centre. Escape of odorless gas with collapse of abdominal walls. Bloody serum among intestines. On lesser curvature of stomach, after enlarging wound, was found fibrous pseudo-membranes which extended to liver border. No perforation of the stomach was found.

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<sup>1</sup> Reported by Steinthal, Ueber die chirurgische Behandlung der ulcerösen Magen und Darmperforation, Archiv f. Klinische Chirurg., 1888, p. 850.



Iodoform gauze was packed from the wound to the stomach region and abdomen closed. Death after three days. The autopsy showed a perforation on the anterior wall two inches above the greater curvature and three and a half inches from the cesophageal opening.

CASE IV.—Also by Czerny, in 1887,<sup>1</sup> laparotomy for gastric perforating ulcer. Man, aged thirty-three. Eight years previously had signs of gastric ulcer without vomiting of blood, and later, signs of slight perityphlitic attacks. Two days previous, one hour after eating, attacked with sudden pain in region of the navel, followed by vomiting, which has persisted; no blood; no stool. On admission, pulse 150. Respiration thoracic. Abdomen markedly swollen in epigastrium. Dulness in lumbar regions. Liver-dulness absent. In the left anterior axillary line tympanitic resonance as high as sixth rib, with a deep note, raising in tone as it approached Poupart's ligament. Diagnosis: Gas collection in peritoneal cavity from perforation of stomach or cæcum. Immediate laparotomy. On opening abdominal cavity a stale-smelling gas escaped and some yellow ascitic fluid. Intestines covered with lymph. Intestines were turned out of the cavity in examining for a perforation. A fæcal abscess, encysted and in upper cæcal region, was found. The cæcum itself and its appendix were, however, intact. An extension of the abdominal incision upward and to the right allowed exposure of pyloric region, where a circular ulcer, the size of a lentil, perforating the stomach on the anterior surface and near the great curvature, was recognized. Through this opening slight pressure on the stomach caused an escape of its contents. It was closed by two rows of silk sutures. Peritoneal cavity irrigated with one-sixth per cent. salicylic solution, then mechanical wiping away of the fibrinous deposits, and finally swabbing with one to five thousand sublimate solution; wound then closed with use of drainage. Death six hours after operation.

Beside the ulcer sewn up at the operation, another, which had not gone through the stomach-wall, was found on the greater curvature. The circumscribed peritonitis near upper part of the cæcum was due to the gastric lesion.

Without a history of gastric symptoms the diagnosis is often impracticable. The cases of peritonitis of unknown origin that too often present themselves in our hospitals can only be treated on the exploratory principles already enunciated. The sudden onset of symptoms, the pain, which, unfortunately, is often misleading as to the location of the lesion, the variations in the vomiting, common to peritonitis generally, only vaguely point, not to the site of the trouble, but merely to the need of surgical interference. The absence of vomiting is not certain enough to be of much value. It can only be of weight with other definite gastric symptoms, and, after all, trends only towards the idea of a large perforation. The sum of symptoms that afford any prospect of a definite diagnosis of a perforative gastric ulcer are briefly these: A previous history of the symptoms of gastric ulcer or gastric difficulty, with a sudden onset of abdominal pain and general or local peritonitis, associated in the former condition frequently with unusually early tympanites, with coincident diminution of liver-dulness,—a symptom of itself possibly misleading, and only to be fairly valuable when, at the exploratory operation, care is taken to make a minute opening into the peritoneum, so as to afford opportunity to appreciate not

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<sup>1</sup> Steinthal, loc. cit.

only the amount but the odorless character of the gaseous discharge,—all other perforations of the alimentary tract being more likely to give a fæcal odor to any gas escaping or being evolved. These symptoms would tend strongly to the diagnosis of a perforating ulcer of the stomach, and such would be intensified if with some or all of them there should be associated left-sided signs of pneumothorax, and particularly so if such a collection of air should show when punctured, on *inspiration*, the escape of air from the canula.

Where signs of a general peritonitis are present, with the previous diagnostic symptoms (not of the encysted or limiting forms), the only hope for the patient is an early laparotomy with a generous median abdominal incision, helped, if necessary, by a transverse division of the left rectus muscle, with suture of the gastric perforation. If none such is found on the anterior wall, the gastro-colic omentum should be divided or torn apart freely, close to the greater curvature, and the posterior wall drawn as much as possible at a time through this opening and carefully searched. Should this not reveal the perforation, and the patient's condition admit of it, one should not hesitate to freely open the stomach anteriorly, and search within the viscus for the ulcer. This hunt will be much helped by a wire speculum and an electric light. Once found, the ulcer should be closed by a double row of Lembert's sutures. I doubt if the procedure of Postempski, of cutting out the ulcer and sewing the freshened edges together, is necessary, but he had a success in so doing. The details of his operation are briefly and imperfectly recorded in the digest of the proceedings of the Berlin Congress.

CASE V.—Postempski<sup>1</sup> (Rome). Man, twenty-seven years of age; suffering from ulcer of the stomach. Laparotomy was performed; then an exploratory incision was made through the stomach-wall, to determine the site of the ulcer. This found, the incision was closed, the ulcer cut out, and its edge closed by sutures. The patient recovered.

Should one find one of the pseudo-pneumothoracic cases presenting itself, it seems to me that perhaps the incision anteriorly of such a one, with a posterior drainage by a second incision under the twelfth rib, would be the best to be done. The single anterior incision was done successfully by Debove, it will be remembered, though it failed to be followed by a good result in the cases of Leyden<sup>2</sup> and Bossi.<sup>3</sup>

Dobson<sup>4</sup> has suggested that in certain of these cases the ulcer should be sutured to the abdominal wall and thus shut off the peritoneal cavity. This does not commend itself as a sound procedure. It may, however, be of service in rare contingencies.

<sup>1</sup> Revue de Chirurgie, 1890, p. 835.

<sup>2</sup> Berlin. Klinische Wochenschrift, 1879, p. 320.

<sup>3</sup> Gaz. Med. Italo-Lombard., 1886, No. 47.

<sup>4</sup> Bristol Medical and Surgical Journal, 1883, p. 196.



So far the question of surgical interference has been restricted to perforations of the stomach by ulceration. The query may present itself to the mind, whether any other condition connected with ulceration of the stomach would demand surgical interference.

A few years since I had charge, with Dr. Abbe, of this city, of a young woman who had, following an attack of measles, repeated and severe hemorrhages from the stomach. She was much blanched, and the question arose whether she could bear another loss of blood. Before the question could be solved, however, septic parotitis settled it against surgical interference. Moreover, at the autopsy it was seen that the ulceration was an extremely minute one and difficult to be detected, even when the organ was laid open and freely exposed to the light. The operation of laparotomy has several times been resorted to, with the section of the stomach, for the relief of hemorrhage as the urgent symptom. None is better known than the previously quoted one of Mikulicz, where the round ulceration was found in the posterior wall of the pylorus going into the substance of the pancreas. This being scraped and cauterized, was cured, and the associated pyloric stenosis was, with the combined use of Nélaton's incision, cured. All save Postempski's were of a similar character.<sup>1</sup>

Such cases, as has been stated, are, however, beyond the scope of the present paper. I can, however, conceive of hemorrhages, from ulcers situated in the body of the organ, so great as to warrant the belief that a repetition may cost a life, and in these instances a laparo-gastrostomy may justly be considered. I only know of one case where such an operation was resorted to. It is given by Abbe<sup>2</sup> in the Report of the New York Surgical Society. The patient was a woman who had had for a month previous hæmatemesis to a severe degree. The third day after admission to the hospital she had severe epigastric pain and elevation of temperature. There was no abdominal distention or rigidity of the recti muscles. Later, severe vomiting of blood took place. It was supposed that moderate peritonitis was present, due to an impending, if not actual, small perforation. Laparotomy was therefore resorted to. No peritonitis found. The anterior wall of the stomach showed nothing abnormal, nor did the posterior wall after it had been exposed through a rent in the gastro-colic omentum. A hardness of the pylorus led to an incision one and a half inches in the anterior gastric wall, but the lumen of the pyloric end was found to be of normal size. The mucous membrane of the stomach was examined through the incision, and it was thought that the whole interior surface was thus inspected. Nothing wrong was seen. The wound of the

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<sup>1</sup> Since the above was written, Lange presented a patient, at a meeting of the New York Surgical Society, who had recovered from a resection of the anterior wall of the stomach for a large ulceration that was due to a probable adenoma. The symptoms of pain, digestive disturbances, and failing strength forced the operation. No hæmatemesis was present, however.

<sup>2</sup> New York Medical Journal, May 2, 1891.

stomach was closed and the abdominal incision sutured. The next day another hæmatemesis, with consequent death. At the autopsy there were found both on the anterior and posterior walls of the stomach, a little to the cardiac side of the centre of the organ, several shallow ulcerations, most of them cicatrizing, two showing, however, sharply-defined loss of the mucous membrane. On the outer aspect, corresponding to one of those on the anterior portion of the stomach, was a slight puckering of the peritoneal surface. There was evidence of peritonitis over the stomach-wall, due to the operation.

This case, at which I was present, demonstrated that the detection of an ulcer within the stomach is a difficult matter even when aided by the eye. The criticism I would venture to make is, that for the proper inspection of such a flaccid, hollow organ a large incision is necessary, so that it can be, if required, turned inside out like a glove, or that its walls can be widely separated and submitted to the glare of an electric-light illumination.

One other condition only remains to be alluded to as demanding surgical interference; its symptoms, when it takes place, are so identical with those that follow a gastric perforation of ulcerative character that they warrant its introduction here. I refer to rupture of the stomach, whether spontaneous or from internal trauma. Of the latter variety one has recently been presented at one of the medical societies of this city, and I have cognizance of another, the details of which I am not at liberty now to give, where the use of lavage was followed by the escape of the gastric contents into the peritoneal cavity. When we consider the comparative frequency with which the distention of the chronically-diseased bladder, resorted to in litholapaxy and in the performance of suprapubic cystotomy, is followed by its rupture, one will not wonder at the occasional production of a similar accident in similar treatment of the stomach, whether resorted to as a therapeutic agent or employed for diagnostic purposes.

Mikulicz<sup>1</sup> early gave a case of this kind. The accident happened in 1880, in a man who, without known cause, several hours before had had severe abdominal pain, though for seven years previously he had suffered from gastric symptoms. Laparotomy revealed stomach-contents in free peritoneal cavity. On the lesser curvature of the stomach, near the cardiac orifice, was a slit-like opening six to eight centimetres long, due to a rupture of the viscus. The stomach was a very much dilated one. The opening was closed with Lembert's sutures, and the abdominal cavity irrigated. The patient succumbed three hours after completion of the operation.

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<sup>1</sup> Sammlung Klinische Vorträge, No. 262.



*TWO CASES OF HERNIA, BOTH TREATED BY LAPAROTOMY: I. A PROPERITONEAL HERNIA; II. A FEMORAL LITTRÉ'S HERNIA.*

BY W. W. KEEN, M.D.,

Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, etc.

THE following cases are of more than ordinary interest,—the first by reason of its rarity, and the second as a contribution to the present discussion on the proper treatment of hernia by laparotomy.

PROPERITONEAL HERNIA; OPERATION; DEATH.

CASE I.—A. B., a young man aged twenty-three, was admitted to St. Agnes's Hospital on June 15, 1889, just as I was about to leave the ward. He was suffering severe pain and was evidently exhausted. He stated that for many years he had had a hernia on the right side, and that two days ago, in consequence of vomiting, it suddenly began to give him great pain. He is quite sure that the vomiting produced the pain and tenderness in the right groin. He had been under intelligent medical care, with attempts at taxis, which, however, had effected nothing. He had vomited at frequent intervals, but the matter had no fecal odor, so far as he can describe it.

*Present Condition.*—He walked into the ward bending over in a stooping posture. His face expressed great pain, and he was in a condition of marked shock. His color was bad,—congested and bluish. He was etherized at once, and the following conditions were found. A tumor existed on the right side, extending from a point a little internal to the middle of Poupart's ligament to the bottom of the scrotum. Its shape was cylindrical and sausage-like. It was very firm, elastic, and dull on percussion, except at the upper and outer end, where it was tympanitic. At the bottom of the scrotum the testicle could be distinctly made out. There was a noticeable fulness extending to the internal ring. Attempts at taxis were persisted in for a few minutes. There seemed to be slight reduction in its size, but the hernia was immediately reproduced when pressure was removed.

An incision was made from a point corresponding to the internal ring to the upper part of the scrotum. As soon as the sac was reached, it was opened, and a mass of omentum nearly the size of a fist, but sausage-like in shape, was found. It was much congested, but not gangrenous. It was divided into four portions, tied, and removed. There were many adhesions to the sac. A small knuckle of bowel was also discovered in the upper and outer part of the sac. Its color was dark, purplish black, but, as the consistence was firm, I did not think it beyond recovery. On trying to reduce the stump of the omentum and the bowel, considerable resistance was felt, but on pushing them up in a direction parallel to Poupart's ligament, they entered what was supposed to be the abdominal cavity. I noticed, however, that the moment the finger was removed the bowel especially came down into the canal again. It would not stay reduced, and it had lost nothing of its dark color. I now continued the incision in the sac completely up to the internal ring, and passed my finger into the supposed abdominal cavity for the purpose of investigating the reason for this persistent reproduction of the hernia. I found a large smooth cavity lying in the iliac fossa and extending outward to about the anterior superior spine of the ilium.

Omentum was readily felt lying in its interior. Exploring its wall systematically, I found a number of adhesions between the omentum and its wall, but the bowel was free from adhesions. As the finger passed around the wall and approached the position of the internal ring, I suddenly became aware of an opening corresponding to the position of the ring. It admitted only the point of my finger, but on gently forcing in the whole finger I found that it was then really in the abdominal cavity. The pouch which I first supposed to be the peritoneal cavity was really extra-peritoneal. Evidently, then, I had to deal with an inguinal properitoneal hernia. I found that the bowel and omentum protruded through the ring, and that this was the seat of the constriction. I now drew out all the collapsed bowel which lay in the properitoneal sac, and with two fingers stretched the internal ring with ease. I was then able to draw down the gut until I could see the seat of the constriction of the bowel. There were fifteen inches of bowel in the sac, and the narrow constriction was very marked. The gut dilated to about half its calibre so soon as the constriction was removed. I had now no difficulty in reducing both omentum and bowel into the true peritoneal cavity. The condition of the patient was very poor: his respiration was hurried and shallow, and the lividity of his lips made me anxious to terminate the operation as soon as possible; so I did McBurney's operation for radical cure. During the operation, which lasted about three-quarters of an hour, he had been surrounded by bottles of hot water, and brandy had been administered hypodermatically a number of times. He recovered consciousness quickly, but gradually sank from exhaustion, and died at 2 A.M., eight hours after the operation. No autopsy could by any possibility be obtained.

*Remarks.*—This case presents another illustration of the fact that a properitoneal hernia is almost never diagnosticated before operation. Had it not been that the bowel persistently returned after its apparent reduction, I should almost certainly have overlooked the properitoneal sac, and the condition would have been entirely unrelieved. His death was evidently the result of the marked shock from which he was suffering by reason of the obstruction.

#### FEMORAL LITTRÉ'S HERNIA TREATED BY LAPAROTOMY; RECOVERY.

CASE II.—Mrs. Y., aged sixty, of Newark, Delaware, was seen by me, at the request of Dr. Henry, June 7, 1891. Three days previously she had been seized with severe colicky pains, which Dr. Henry relieved by morphine followed by purgatives and later by enemata. The lower bowel was emptied of scybalous masses, after which no movement took place. She vomited almost constantly from the beginning of the attack, and by the morning of the 7th this had assumed a faecal character. There had been no pain of any moment after the initial colic.

I found a spare but well-nourished woman, who before the present sickness had never been ill in her life. There was evident faecal vomiting, slight pain referred to the region of the umbilicus, and obstinate constipation. Examination by the vagina and rectum was negative; the rectum was empty. Naturally, I first carefully examined the hernial regions, but discovered no hernia. Dr. Henry and a prior consultant had done the same, with a similar negative result. The abdomen was not markedly distended, but in the right iliac fossa were some distinctly rigid coils of intestine, which suggested the possibility of intussusception. Very little pain was complained of, and there was no tenderness over any of the hernial regions.

As it was evident that there was acute obstruction from some obscure intra-abdominal cause, a median abdominal section was immediately done antiseptically.



The belly wall was extremely thin. The moment I passed my fingers into the right iliac fossa, I discovered that she was suffering from a right femoral hernia. By slight traction from within and pressure from without, I was able to liberate the bowel, and found that it was a true Littré's hernia, a little more than half the calibre of the bowel being caught. The constricted portion just passed through the femoral ring, and, with my fingers in the abdomen, by bimanual examination I was able to recognize the hernia, although, when both Dr. Henry and myself carefully examined the part externally alone, no hernia was detectable. The condition of the bowel wall was very fair, and, after flushing the abdomen with boiled water to wash out the slightly-bloody serum which had accumulated, the wound was closed by suturing the peritoneum and the abdominal wall separately.

On June 30, Dr. Henry informed me that after the first day the temperature did not exceed 100° F.; but, while the peritoneum united promptly, the rest of the belly wall failed to unite by first intention and healed slowly by the granulating process. The value of separate suture of the peritoneum and the belly wall is well shown by this case.

*Remarks.*—At the meeting of the British Medical Association last August, Mr. Tait proposed laparotomy as the usual treatment for hernia. Exception was taken to this view by some of the most prominent men present. My own opinion is that herniotomy is the better operation for routine practice, but yet there can be no question that in a few exceptional cases laparotomy should be done. The present case is a good illustration of conditions requiring this method of treatment. Two competent physicians had examined the patient with great care in consultation before I saw her. \* I repeated the examination, and with the more care because of their prior examination and because there was nothing perceptible that could account for her condition. There was no swelling in any of the ordinary hernial regions—umbilical, inguinal, or femoral—on either side. The pain was referred to the umbilicus, and the physical signs led me to suspect intussusception at the ileo-cæcal valve. The absence of the usual signs of hernia is accounted for, of course, by the character of the hernia,—a small Littré's hernia, involving only half the circumference of the gut, yet producing complete obstruction. The ease with which the hernia was reduced and the good recovery which followed were very gratifying. The abdominal wall was so thin that the muscular and cutaneous layers failed to unite by first intention.

NOTE ON THE PARASITE OF QUARTAN MALARIAL FEVER, AND A WORD ON THE VARIETIES OF THE MALARIAL PARASITES.

BY GEORGE DOCK, M.D.,

Professor of Theory and Practice of Medicine and of Clinical Medicine, University of Michigan.

HAVING been convinced very early (1887) of the far-reaching importance of Golgi's theory of the development of the *plasmodium malarix*, in all my own observations since then I have paid special attention to the forms encountered and the changes undergone in the various stages of the disease. Some of my results have been reported elsewhere.<sup>1</sup> These confirmed Golgi's statements, on the whole; the confirmation receiving additional value from the facts that the cases were carefully observed clinically, and came from widely-different localities and latitudes. It was a matter of some interest that I often found varieties of the parasite which were not precisely typical, though their recognition, from Golgi's description, was easy. In three out of five cases of tertian fever studied after the publication of my last paper, I found very characteristic and symmetrical forms. I have stated elsewhere that I also found in Texas the "small plasmodium" of Marchiafava and Celli, so adding to our knowledge of the organisms in this country.

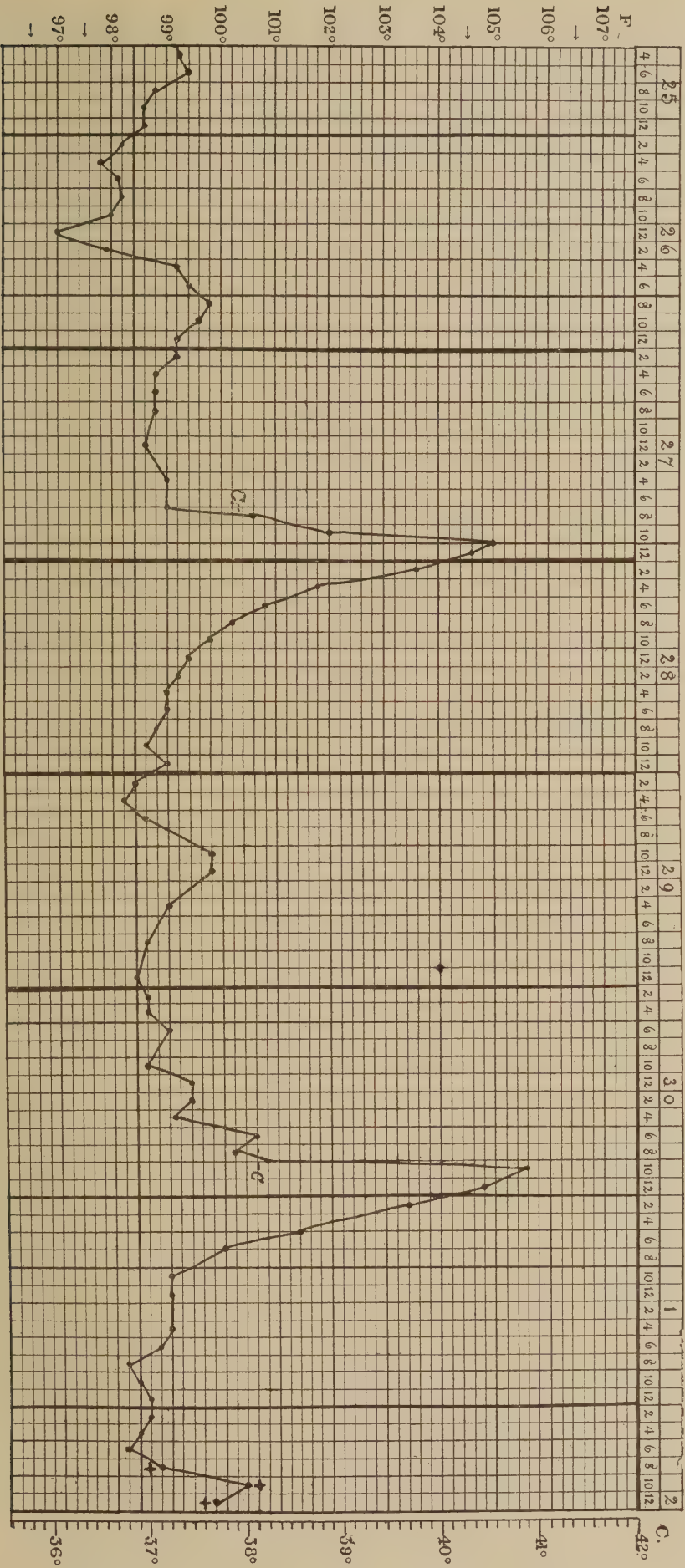
Until recently I was unable to examine a case of quartan fever. The rarity of quartans in the South has been mentioned by others, and during a residence of almost three years I neither saw nor heard of a true case. One hears, sometimes, of fevers returning on the fourth day, but in such cases it can usually be learned that quinine has been given irregularly and the course of the disease altered. Finally, in June, 1891, I encountered a typical case of quartan fever, in which I studied the parasites, and, as I know of no similar case in this country, feel that its publication is not without value.

The patient, John Fagan, carpenter, aged twenty-one, with a clear previous history, had been in Texas three months, living recently near Houston. Two weeks before admission chills began and recurred every fourth day. The patient took no medicine, but after two weeks came to the hospital and was admitted the day after a chill. He was put to bed, compound tincture of cardamom prescribed in small doses, the temperature taken every two hours, and blood examinations made at intervals. The temperature-chart, reproduced here, shows the pure quartan type, though

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<sup>1</sup> Medical News, July 19, 1890; *ibid.*, May 30, June 6, 1891.





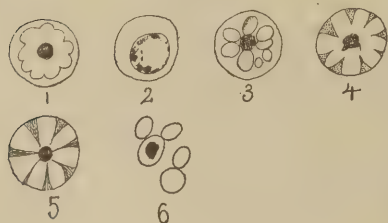
C indicates chill. + indicates the administration of quinine in five-grain doses.

the apyrexia is not so low as is common in tertians. The symptoms during the two paroxysms observed were the same as those described by the patient on admission.

They began with a chill, without pronounced rigor, with pain in the back and limbs. Vomiting came on early,—first undigested food, then bile. As the fever came on there was a dry cough, with yawning, headache, and cyanosis. Sweating did not follow. The temperature began to rise before the patient was aware of the onset. In the second paroxysm the chill and vomiting came on later, but with almost the same temperature (100° F.) as the first, and the acme, although .6° higher, was reached one hour earlier. The fall, also, was more abrupt in this latter paroxysm. Whether this indicated a tendency to recovery cannot be determined, as the patient was cinchonized after the second chill, and no more paroxysms occurred. There was slight enlargement of the spleen and liver, and a muddy tint of the skin and scleræ.

The result of examination of the blood was as follows: at the first examination, on the second day after the chill, a few plasmodia of medium size were found. They did not differ in appearance from those of similar size in tertian fever, though the amœboid motion was rather slow. Next day they became larger, and towards evening almost or quite filled the red blood-corpuscles. Segmentation began before the temperature got above 99° F., and was complete within about an hour, or before the chill came on.

At all times the plasmodia were remarkable for their scarcity. On the day after a chill none were to be found. After that, though always present, there were so few that in the rapid search of a good preparation—that is, in about fifteen minutes' constant moving of the slide—only two or three could be found. This was true of the segmenting stage. The segmenting bodies were striking and peculiar, and it was seen at once were different from any previously encountered. The drawings from which the cut was made were taken at the time, and a comparison with Golgi's figures will



Parasite of Quartan Ague.

show the resemblance.<sup>1</sup> There were some minor points of difference. In some cases segmentation began before the hæmoglobin was entirely destroyed, and in many the "shell" of the blood-corpuscle could be seen at a late period, as in Figs. 1 and 3 (though, of course, not so distinct as in the cut). In most cases the rosettes were remarkable for their symmetry,

which was often more perfect than as in Figs. 4 and 5. The number of segments was usually seven or eight. In a few cases, however, the division was irregular and the resulting spores as in Figs. 3 and 6.

The pigment was in black granules of varying sizes and shapes, but

<sup>1</sup> See Fortschritte der Medicin, 1886, Taf. III. p. 575; *ibid.*, 1889, Taf. I. p. 81.



seldom in rods, so common in tertians. In the later stages the pigment was aggregated into black smooth or slightly-irregular masses, having usually a central position in the rosette. In the different stages the bodies found showed a great similarity in size and general appearance, agreeing with the pure type of the chart, but during the second paroxysm I encountered one young form represented in Fig. 2.

Owing to the rapidity of the process of segmentation, I was unable to make permanent preparations. Being busily engaged following up the changes under the microscope, I put off the preparation of cover-glass preparations until late in the paroxysms, and on examining these afterwards found the organisms wanting.

No flagellate bodies or crescents were found, and no pigmented leucocytes. The latter fact is not remarkable, in view of the small number of organisms found. It was not possible to examine splenic blood to see if the scarcity of organisms was general.

The resemblance of these to the organisms found in Pavia by Golgi was manifest to me when I examined later the beautiful photographs of the latter.<sup>1</sup>

With this the identification of the principal varieties of the malarial parasite, in the United States, is complete. We find the marked varieties of periodic fever accompanied by parasites sufficiently peculiar to be diagnostic.

The varieties are: the parasite of quartan fever; the parasite of tertian fever and of its combinations, the common quotidian intermittents; the parasite of the quotidians which tend to remissions rather than intermissions, with the other clinical features of remittents (pernicious fever). Whether these are distinct species in a biological sense can hardly be asserted. I agree with those who believe in the constancy of the various forms. It is, however, too early to give specific (much less generic) names to the various forms, and much more rational to distinguish them by provisional names as a matter of clinical convenience.

That there are other varieties is not to be denied, and I have mentioned in another place the peculiarities of one I found in a tropical case, hitherto, so far as I can learn, undescribed. Such occurrences emphasize the importance of studying the organisms in all places and in all kinds of cases.

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<sup>1</sup> Zeitschrift f. Hyg., Bd. x., Heft 1.

OBSERVATIONS ON "KOCH'S LYMPH."<sup>1</sup>

BY JOSEPH JONES, M.D.,

Professor of Chemistry and Clinical Medicine, Tulane University of Louisiana; Visiting Physician  
Charity Hospital, New Orleans, Louisiana.

THE objectives employed in the following observations ranged from one-fifth to one-fifteenth of an inch. Those precautions were taken to secure such results as were possible in the chemical and microscopical manipulation of the small amount of material.

## PROPERTIES OF KOCH'S LYMPH.

1. Reddish-brown liquid, with oily movement and consistence of thin glycerin.

2. Clear, with a few flocculi.

3. Musty odor, like that of stale beef extract.

4. When burned in flame of alcohol-lamp, emits an odor like burning beef extract.

5. Reaction strongly alkaline.

6. When a drop of the undiluted extract was placed in the eye of a living animal, it appeared to cause a disagreeable sensation, attended with closing of the lids temporarily, but it induced no permanent irritation or inflammation. A repetition of this experiment caused no perceptible injury to the eye or animal.

7. No appreciable effects were induced by the "lymph," when administered internally, by the mouth, to living animals.

The fluid, in its innocuous effects, when applied to living mucous membranes, differed from the poisonous alkaloids, and from hydrocyanic acid and the cyanogen compounds.

8. Mingles rapidly and freely in all proportions with distilled water.

9. When injected with varying degrees of dilution with distilled water

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<sup>1</sup> The term *lymph*, originally applied to this product of the "*pathological laboratory*," is inappropriate. Lymph is applied to the fluid in the lymphatic vessels, the product of the filtration of the liquid portion of the blood through the walls of the capillaries; also to certain products of lymph-exudation in wounds and inflamed and diseased structures. The more recent term *tuberculin* is more appropriate, in that it indicates the origin of the liquid, or at least a portion of its heterogeneous elements and products, from the infectious disease *tuberculosis*, due to a specific bacillus and characterized by the formation of tubercles in various parts of the body. At the same time no distinct or definite chemical product has been separated from the cultures of the tubercular bacilli to which the term tuberculin can be applied.



(fifty per cent., twenty-five per cent., ten per cent., one per cent., or one-tenth per cent.) into the subcutaneous tissues of living animals (cats, rabbits, and guinea-pigs), only slight local irritation and no sloughing were induced at the points of injection. The injections were followed by fever of greater or lesser duration. The animals appeared to regain their normal conditions in varying periods of four to seven days, and were reserved for future observations.<sup>1</sup> The liquid appeared to be far inferior in immediate effects, when injected subcutaneously, to prussic acid, strychnine, and serpent poison; neither were its manifest effects identical with those of septic poison.

10. Uncoagulated by heat.

11. Uncoagulated by nitric acid.

12. Uncoagulated by heat and nitric acid.

13. Chemically pure absolute alcohol threw down from the "lymph" a flocculent, whitish deposit.

14. Solution of nitrate of silver threw down a heavy white deposit, showing the presence of chlorides in considerable amount.

15. Soluble barium salts gave slight precipitates.

16. Stannous salts gave no evidence of the salts of gold.

17. Microscopic examination of the undiluted "Koch's lymph," with objectives varying from one-eighth to one-fifteenth of an inch, revealed the presence of minute ovoid and rod-shaped bodies, resembling the *spores* and *bacilli* of the "*bacillus tuberculosis*," as described by Koch. These organisms, in their size and structure and behavior with staining agents, corresponded with the "*bacillus tuberculosis*."

18. When the "lymph" was diluted with boiled distilled water, and preserved in chemically clean test-tubes, the mouths of which were carefully guarded by antiseptic cotton wool, the fluid became turbid. Microscopic examinations revealed the fact that the turbidity was due to the multiplication of organisms presenting physical and chemical properties similar to those of the "*bacillus tuberculosis*."

19. The addition of a drop of the "lymph" to "Pasteur's sterilized liquid" was followed by the development of the spores and slender, rod-shaped organisms resembling the "*bacillus tuberculosis*."

20. The spores and bacilli of "Koch's lymph" were cultivated, with the necessary precautions to exclude all external germs from the atmosphere and external objects, upon various substances or media, as serum, blood, boiled potato, coagulated white of egg, and boiled aseptic crystallized sugar.

21. The cultivations in fresh blood were strongly alkaline; those of potato, white of egg, and crystallized sugar were acid.

22. When a small quantity of the "lymph" was added to a carefully-

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<sup>1</sup> Rabbits thus treated died in from three to four weeks; guinea-pigs, at the end of six weeks; death was preceded by loss of flesh and diarrhoea. The feline race resisted the action of "Koch's lymph" more vigorously than rabbits or guinea-pigs, although the initial reaction was well marked.

sterilized solution of crystallizable sugar, the clear solution became turbid from the development of bacilli, and emitted a sweetish odor similar to that which I have often observed to be exhaled by patients suffering from phthisis pulmonalis in the advanced stages.

#### CONCLUSIONS.

(a) The active principles of "Koch's lymph" appear to reside in a colloid nitrogenized compound, coagulable by absolute alcohol, and in living germs,—micro-organisms,—spores and bacilli, similar to those of the "*bacillus tuberculosis*," and capable of multiplying within and without the living organism.

(b) The potent effects of "Koch's lymph," when introduced into the blood of healthy and diseased human beings, may be referred, in part at least, to the rapid multiplication and action of micro-organisms similar to, if not identical with, the "*bacillus tuberculosis*."

(c) The results of the chemical and microscopical examination of the contents of this vial of "Koch's lymph" have led me to exclude this liquid from the list of remedial agents.

The excitement occasioned by the extraordinary statements with reference to the curative powers of Koch's mode of treating tuberculosis led to a careful review of all the remedial agencies at the command of the author in his civil, military, and hospital practice during the past thirty-five years, 1855–1891, and his faith in the following measures and agents has been strengthened:

1. Public and domestic hygiene: (a) location of dwellings, villages, towns, and cities; (b) water-supply; (c) drainage and sewage; (d) ventilation and heating; (e) food-supply, meat- and milk-supply; (f) domestic sanitation.

2. Meteorological conditions or climate.

3. Food.

4. Clothing.

5. Exercise; intelligent and progressive physical development of children.

6. Remedial agents: (a) counter-irritants; (b) carefully-regulated respiration and out-door exercise; (c) nitrogenized and non-nitrogenized aliments; (d) pepsin; (e) cod-liver oil, glycerin, and fats; (f) phosphates of lime and iron; (g) hypophosphites of iron, manganese, calcium, potassium, and sodium; (h) iodine; (i) iron and its preparations; (j) wine and alcoholic preparations in moderation; (k) mineral acids; (l) vegetable tonics, nuxvomica, and preparations of bark, etc.; (m) tar, tolu, and creosote; (n) antipyretics; (o) opiates when indicated.

In the treatment of phthisis, hygiene and climate, in conjunction with the *materia alimentaria*, should be regarded as superior to the *materia medica*.



## *THE RECOGNITION AND TREATMENT OF THE SIMPLER FORMS OF NEURITIS.*

BY G. W. McCASKEY, A.M., M.D.,

Professor of Theory and Practice of Medicine and Clinical Diseases of Chest and Nervous System, Fort Wayne College of Medicine (Medical Department Taylor University), Fort Wayne, Indiana;  
Fellow of the American Academy of Medicine; President of Fort Wayne Academy of Medicine.

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INFLAMMATION involving one or several of the nerve-trunks of an extremity is among the common affections encountered with comparative frequency by physicians in general practice. If I may judge by the history of the cases that seek my advice, many of them are first looked upon as instances of rheumatism or neuralgia, and consequently mistreated until a subacute or chronic stage has been reached, when the disease is always intractable, and if sufficient time has elapsed may have wrought irreparable mischief in the way of degenerative changes in nerve and muscle.

For these reasons it has seemed to me advisable to call attention to the subject and urge the importance of a careful investigation in all cases of pain in one or more of the extremities. Instead of entering in detail into the symptomatology of the morbid process, my object will, I think, be briefly attained by insisting upon the necessity of subjecting the main nerve-trunks to deep pressure, for the purpose of determining the presence or absence of tenderness, and possibly swelling. This one procedure, coupled with a fair knowledge of the clinical picture presented by the commonly accessible text-books, ought to be sufficient to guard against errors attended with such disastrous consequences as were observed, for instance, in the following case, referred to me by Dr. George B. Stemen, into whose hands it had fallen at a late stage.

Mr. A., age twenty-five, mechanic, had been taken two years previously with severe pain in the right forearm, following exposure. The case was regarded as one of rheumatism, and some general treatment ordered. When seen by me, several muscles of the forearm had undergone hopeless degeneration; they failed to give the slightest response to faradic stimulation after prolonged galvanic and faradic treatment. The limb was permanently disabled.

The ordinary etiological factors should be kept constantly in mind, to aid in the recognition of the disease. Among these, exposure is conspicuous, as in the case mentioned. In another case a locomotive engineer came into my office after a "run" through a driving storm of rain and sleet. His right arm, which had been especially exposed, was paining him severely. Examination revealed the fact that the entire length of the musculo-spiral

nerve was exquisitely tender. In another case a lady consulted me on account of pain and paræsthesia sharply limited to the distribution of the radial nerve. She had wakened up the previous morning to find that her arm had been cramped under her head in a very painful manner, having probably thus subjected the nerve to pressure for hours. Both of these cases, which were, of course, instances of neuritis involving the musculospiral and radial nerves respectively, recovered in three or four weeks. Among other causes may be mentioned the rheumatic and gouty diathesis, syphilis, and alcoholism.

When recognized, what are the methods of treatment that will give us the best results? Absolute rest of the affected nerve is the first indication. This means immobility of the muscular and other tissues through which the nerve passes, in order that there may be no irritation from pressure or motion. It also means absolute rest of all the muscles to which the various filaments of the nerve are distributed. If, for instance, the nerve-trunk involved is in the arm, motion of the fingers should be interdicted, whether it causes pain or not, because such motion cannot take place without calling into play the functional process of conduction, which is, of course, incompatible with the desired state of complete physiological rest. The nerve-fibre can no more conduct impulses without molecular changes than a nerve-cell can generate or send them out without this molecular disturbance. In the latter case it has been demonstrated under the microscope. To permit such molecular changes to occur in the fibres of an acutely-inflamed nerve is not remotely akin to throwing sand into the eyes in a case of ophthalmia. Absolute rest, even to the greatest possible disuse of the nerve-fibre, is what is meant, and it should be secured. Of course the limb should be placed in such a position as will most completely relax the parts around the nerve. In cases involving other nerves than those of the extremities, such modifications will have to be made as the circumstances require. The fact is, however, that with the exception of the nerves of the face, in nearly all of those cases involving isolated nerves, those of the extremities are the ones affected.

In this class of cases the free use of heat, in the form of a moist compress entirely enveloping the limb and covered with oiled silk, and outside of this hot flannels, has given me the best results. About twice or three times in the twenty-four hours, for periods of one or two hours, I have the compress maintained at as high a temperature as can be borne. The relief from pain is very marked in consequence, and patients generally get along with very little or no morphine. This course is only pursued until the most acute symptoms have subsided. If necessary for the relief of pain, opiates are, of course, employed, but they are dispensed with if possible.

The beneficial effects of the faradic brush in the acute stage, admitting its temporary sedative influence, are, in my opinion, deceptive. Galvanism may possibly be of service in this stage, but, as a rule, I believe that elec-



trical treatment had better be postponed until the acute stage has passed. I do not think that it is any more rational to stimulate an acutely-inflamed nerve with electricity than it would be to so stimulate an acutely-inflamed lung or joint. The time for electricity to be of service is after the acute stage has subsided, and the fibrinous exudations between the nerve-fibres remain as morbid products to be removed. Galvanism here plays a valuable rôle. We should endeavor to be certain to include the inflamed segment of the nerve in the path of the current, even if one electrode has to be placed over the spine at a point near the origin of the roots of the nerve, and the other near its periphery. Whether the current is ascending or descending does not seem to make much difference. Indeed, the fact that the nerves are mixed, and convey impulses in both directions, would seem to indicate that one direction is quite as rational as the other for the use of the current. Its strength must be very mild,—if a meter is used (and it should be), not more than one-half to one milliampère; if it is not used, then such a current as would be barely but distinctly felt. The *séance* should not last more than five minutes, and should not be repeated oftener than once every day or every other day. The exact time when the galvanic treatment should be commenced must vary in different cases,—certainly not sooner, as a rule, than ten days or two weeks, and in many cases, where the inflammatory process is intense, it should be longer than this.

It is very doubtful if internal treatment has any marked effect upon the course of the inflammation, unless there is a syphilitic or rheumatic history, in which cases specific medication might be indicated. Unless there is positive evidence of the existence of these underlying conditions, however, such remedies should be withheld, as they would probably do harm rather than good. Even in the temporary paralysis following the acute disease, so eminent an authority as Julius Althaus does not place any reliance on internal medication.<sup>1</sup> It would be then, if ever, that the alleged alterative action of these remedies should be of service in removing the residual inflammatory products. But here, as in the acute stage, local measures, combined with proper attention to the general health, constitute the best treatment.

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<sup>1</sup> Med. Chirurg. Rundschau, November 15, 1891, p. 343.

## LUNG CONSOLIDATION FOLLOWING LA GRIPPE; GOOD RESULTS OF TREATMENT.

BY ALLISON MAXWELL, A.M., M.D.,

Professor of Theory and Practice of Medicine in Central College of Physicians and Surgeons,  
Indianapolis.

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IN a recent article on the treatment of cancer, by Drs. Farquhar Curtis and William T. Bull, of New York, the statement is made that there is a tendency to self-deception on the part of the sufferer from cancer, and that even the family physician often hesitates to give a name to the disease until the patient is past relief, and he is allowed to die without any real effort to eradicate the disease. A similar course is often followed in the treatment of chronic lung affections. The physician does not take hold of the case as if he expected to cure it, but simply uses palliative remedies, considering the case a forlorn one from the start, whatever form of phthisis it may be, whatever its origin. It is against this lack of effort on the part of some physicians that I wish to protest, and as a text will present two cases of consolidation of the lung which have followed la grippe.

In syphilitic phthisis, where we find a destructive disease of the lung akin to fibroid phthisis, we have much better success in treatment than in phthisis not due to syphilis, and so I believe the success in treating phthisis which is directly the result of an attack of la grippe, if vigorously treated in time, offers better prospect of recovery than if due to other causes.

CASE I.—C. M., bookbinder, aged twenty-seven; single; previous health good; family history good, father and mother and sisters living and in good health. He had a severe attack of la grippe in December, 1890. After three weeks of fever and hard coughing he was able to be out of bed, and soon after began his usual vocation. He worked off and on, never free from cough, never feeling right well, until April, 1891, when he came home to his parents, because he was no longer able to work.

At this time I saw him. He was so weak that he was barely able to walk. He was pale and much emaciated; had no appetite, sweat profusely at night, was much troubled with diarrhœa, had continued pain in the right side just below the nipple, extending posteriorly; had hoarseness and cough which had been very annoying for four months, and at this time was expectorating a large quantity of yellow pus and mucus. His pulse was 120, temperature 102° to 103½° F., respiration 30.

Physical examination showed moderate dyspnoea, with lack of proper expansion of right lung. Mensuration showed no difference in the two sides; vocal fremitus was increased over the lower half of the right lung. On percussion there was dulness over the lower half of the right lung, and auscultation showed the respiratory murmur absent in the same region, and in its place were bronchial respiration and abundant subcrepitant râles.

The bacillus tuberculosis was present also in the sputum.



The right lung was normal, except for exaggerated respiration.

With the above conditions, the prognosis looked very unfavorable, for his symptoms had been about as bad for two months and his cough had been so incessant that he had slept but little day or night.

*Treatment.*—The first object in treatment was to try to limit the inflammatory process. I put a thapsia plaster, six by ten inches, over the consolidated portion of the lung. It made the side very sore, as much so as a blister; it did not, however, act suddenly, like a blister, but kept up a continuous effect for a week, the length of time it was left on. I gave internally one and a half drachms of terraline with one drop of beech-wood creosote three times a day in a wineglassful of wine.

The cough was controlled somewhat by these remedies, but, because of so much loss of sleep and inability to lie down on account of the cough, I prescribed the following:

R Extr. ipecac. fld., gtt. v;  
 Extr. rhei fld.,  
 Extr. senegæ fld., āā ʒss;  
 Morphinae hydrochlor., gr. j;  
 Syrupi simpl., ʒiv;  
 Ol. sassafras, gtt. iv.—M.

Sig.—A teaspoonful every two or three hours.

He was also given the one-hundredth of a grain of atropine at bedtime for the night-sweats.

At the end of two weeks the eruption and semi-pustular condition of the skin due to the thapsia plaster had disappeared, and another thapsia plaster was applied partly over the same region, and left on for two weeks. The fever began to decline, the appetite to improve, the night-sweats disappeared, and strength was returning. At the end of six weeks all his symptoms were much better. He coughed very little, had no fever, had a good appetite; the subcrepitant râles had largely disappeared, the dulness was less intense and over less surface. In fact, he was rapidly convalescing and gaining in strength. On account of continued dulness, however, and a lack of proper expansion of the diseased lung, a third thapsia plaster was applied.

In addition to these measures of treatment, he was encouraged to take a farinaceous diet, also eggs, butter, and milk and cream, as much as possible.

Three months after beginning treatment, there yet remained some dulness, but there was considerable inflation of the portion of lung which had been affected. He regained his normal weight and strength and feels that he is entirely well, having resumed his occupation of bookbinding.

This case presented for several months every symptom of tubercular phthisis, and only vigorous treatment prevented entire breaking down of the lung-structure and destruction of the patient.

CASE II.—G. W., aged forty-seven; merchant; married; formerly healthy. During the past two years I had examined him twice for life insurance, and he was in perfect health. His family history was good. Four months before I saw him he had a siege of la grippe lasting several weeks, with severe cough. During these months he had lost about thirty pounds in weight, was emaciated, no appetite, slight fever, and so weak that he was scarcely able to be out of bed. He complained of not being able to breathe with the right lung for two months.

An examination showed that two-thirds of the lower portion of the right lung was consolidated. La grippe four months previously had left this condition. It was at a stage when the breaking-down process would soon have occurred. He was at once blistered with a fly-blister all over the consolidated lung, a small portion at a time. He was given one-grain beech-wood creosote pills three times a day, and the following mixture was prescribed:

R Ol. morrhuæ, ℥ij;  
 Syrupi hypophosph. comp., ℥ij;  
 Fld. ext. malt (Trommer), ℥ij.—M.  
 Sig.—A tablespoonful three times a day.

After the blister had healed thoroughly, a thapsia plaster was shifted over the diseased lung from place to place, keeping it pretty well irritated for two months longer. To-day he is a well man. The dulness has all gone, and the respiratory function of the lung is restored. He has regained his color and former weight and strength, and attends actively to his duties.

I have had several other cases where the lung had remained consolidated for some time following la grippe, not so marked as these two, which were relieved by like treatment. However, I have had some cases that marched steadily to a fatal termination under the same treatment, cases which did not seem so bad in the beginning as these two.

Durant, in the *American Practitioner*, 1877, states that in the treatment of these cases we have to fulfil at the same time two opposite indications: "1. To recuperate and fortify the general organism by suitable constitutional treatment. 2. To diminish the local and subdue the general irritation by an antiphlogistic and weakening treatment."

In regard to the curability of phthisis, Andral did not believe that phthisis had ever been cured. Laennec and others of the older writers held somewhat the same opinion, and even Niemeyer, in his "Practice of Medicine," 1869, says that death is the sole termination of tuberculosis, but when dependent on pneumonia, as was the probable origin of the two cases above, he gives some hope of improvement. Formerly so little was done in combating phthisis that it was regarded an *opprobrium medicinæ*, and the laity as well as the physicians considered that to diagnose a case as phthisis was equivalent to signing a death-warrant; but, on account of the rapid strides of medicine during the past twenty years, we now hold a different opinion.

The late Dr. Austin Flint states that he has had recovery from phthisis in twenty-three cases, purely from an intrinsic tendency, or a self-limitation. He has had twenty-one recoveries due to remedial agencies. These forty-four cases embraced those in which the tuberculous affection was small or moderate and those in which it was considerable.

Dr. N. S. Davis says, other conditions being favorable, not only may we make a favorable prognosis in many of the cases that come under our observation in the early stage, but in cases that are further advanced.

Dr. Loomis says, "Chronic pulmonary phthisis is not necessarily a fatal disease. Its morbid process may be arrested in the early stage in a large proportion of cases. In the advanced stage, or stage of cavities, proper treatment will prolong life and in some cases permanently arrest the progress of the disease. Recovery has occurred in one-sixth of my recorded cases during the past ten years."

Roberts, "Theory and Practice of Medicine," states, "There is now



ample evidence to prove that phthisis may in many cases undergo a complete cure, while in a large proportion its progress may be greatly delayed by appropriate treatment and life rendered fairly comfortable."

Schauffler, "Reference Handbook of the Medical Sciences," says, "And yet, even quite advanced cases, with large cavities and the most profound general disturbances, sometimes recover."

Strümpell states that in individual cases, with very favorable external conditions, circumscribed tubercular affections of the lungs have been certainly found to heal.

Dr. Shattuck says, in regard to the curability of phthisis, that "the clinical evidence is greatly strengthened by the frequency with which, after death from any cause, the remains of an old phthisical affection are found. In 1857, 39.50 deaths from consumption were returned in the State of Massachusetts for each ten thousand of the population; in 1883, 29.90." This decrease was due not only to prophylaxis, but also to good management in the treatment.

In the treatment of phthisis in its various stages I tried the pneumatic cabinet for over a year, combined with inhalations; I have given the Bergeon method a fair test, and have seen the Koch treatment given a fair trial in our city hospital; and none of them seem to be so efficacious as the continuous counter-irritation, associated with proper medicinal, hygienic, and climatic adjuncts.

In this paper I make no claim to innovations, but have presented these two cases from which to draw the conclusion and emphasize the fact that, as phthisis in some cases is self-limited, as in some cases it is curable by medicinal and climatic remedies, and as many cases become non-progressive and life is thus prolonged, therefore we should certainly attack the disease with a zeal born of hope, and not with a weak heart.

# CLINICAL LECTURES.

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## *ABSCESS OF POSTERIOR MEDIASTINUM, WITH CYANOSIS AND SUBCUTANEOUS EMPHYSEMA; VENESECTION; RECOVERY BY DISCHARGE THROUGH THE LUNG.*

CLINICAL LECTURE DELIVERED AT THE UNIVERSITY HOSPITAL.

BY WILLIAM PEPPER, M.D.,

Provost and Professor of Theory and Practice of Medicine in the University of Pennsylvania.

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IN bringing before you again this important case, upon which I commented briefly to you immediately after the admission of the patient to the hospital, I will give a brief summary of its course to this date.

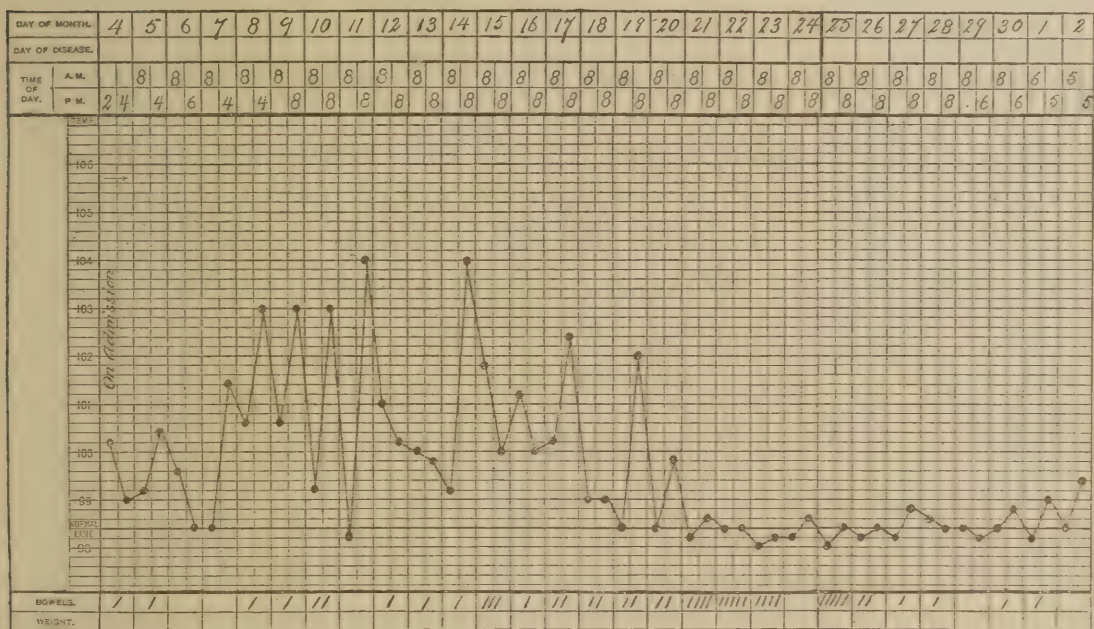
M. G., aged twenty-eight years, a native of Philadelphia, engaged in driving heavy carts, contracted syphilis ten years ago,—two years prior to his marriage. His first child was still-born, the second died of membranous croup; he has no living children. His work has required much heavy lifting. During the last year he has complained, at intervals of a few weeks, of attacks of vertigo of moderate severity. He considered himself well, however, until ten weeks before admission to the University Hospital, which was on November 5, 1891. He then began to complain of a sense of tightness about the chest, with difficulty in breathing. He located the constriction at the suprasternal notch. He had some cough and a little expectoration, but this passed off in a week. He had pain in the left arm, at times quite severe. He had consulted several physicians, but had obtained no relief, and the sense of constriction and of dyspnoea was steadily increasing.

On admission, his distress was extreme. The face and the hands were deeply cyanosed; the left pupil was larger than the right; he was unable to lie down or recline, and was obliged to remain constantly in a sitting position, though he did not get relief from leaning forward. The voice was impaired and wheezy; there was a hard, stridulous, and wheezy cough; the respiratory murmur over the lower lobe of the left lung posteriorly was very much more feeble than over the corresponding area of the right side, without the presence of pleural effusion to explain it. The heart's action was rapid, but no valvular lesion existed. There was apparently some impairment of resonance over the upper piece of the sternum. No abnormal prominence or pulsation or thrill could be found anywhere. Examination



of the larynx and of the eye-grounds gave negative results. The urine was normal. A remarkable feature was a high degree of subcutaneous emphysema, which extended over the neck and the upper part of the chest almost as far down as the nipple-lines. There was no apparent source of explanation of this unusual condition.

The symptoms evidently pointed to intrathoracic pressure. The cough, the voice, and, above all, the marked impairment of respiratory murmur over the lower lobe of the left lung indicated that the pressure was about the left bronchus. It is true that the inequality in the pupils and the slight impairment of resonance over the upper piece of the sternum suggested that the cause of pressure might occupy the upper part of the anterior mediastinum. I have stated, however, that the examination of the larynx



was negative. There was no difference between the radial pulses. Moreover, what was curious and instructive was the fact that, on careful inquiry, it was learned that both the father and a sister of the patient had similar inequality of the pupils. It was doubtless, therefore, a mere physiological peculiarity.

The syphilitic history and the heavy lifting required by his occupation favored the view of aneurism; but the most careful examination failed to detect any such lesion. Another thing which strongly militated against the view that aneurism was the cause of the pressure was the fact that the patient had moderate fever on his admission. And I must now add that this fever rapidly increased and became associated with delirium which, for nearly two days, was so violent as to require restraint. He struck one of the resident physicians and, being a powerful man, dislocated one of his fingers. On November 7, the third day of his stay at the hospital, the symptoms were so alarming, with deep cyanosis, labored action of the heart, orthopnoea, and high fever, that I had him bled, from the arm, to the extent

of twenty ounces. The good effect of this was immediate; and, although cyanotic symptoms returned to some extent on the following day, a material improvement in his condition dated from the time of the venesection. The subcutaneous emphysema extended somewhat. The fever, as shown by the accompanying temperature-chart, assumed a markedly hectic or septic type; cough increased; and there was a rapid development of the physical signs of infiltration of the lower lobe of the left lung. There was no rusty expectoration. Repeated examination of the sputa showed no bacilli. There was marked difficulty in swallowing, and he was conscious of a point of great obstruction about the mid-sternal level.

The only view which now appeared tenable was that the cause of pressure was of inflammatory nature. It was possible, either that a syphilitic ulcer had occurred in the œsophagus and had perforated, setting up suppurative inflammation in the posterior mediastinum, or else that an abscess, probably of septic nature, had occurred primarily in that position. It seemed probable, further, that the tissues near the root of the left lung had then become invaded, so that the vesicular tissue was opened at one or more points, allowing air to escape and burrow its way along the primary bronchus and thence up the trachea, until it finally infiltrated through the fascia of the neck, and thus produced the subcutaneous emphysema.

I have had occasion, before now, to refer to the production of such emphysema as is here seen by a rupture of air-vesicles under the pleura in whooping-cough, in the expulsive stage of labor, or from the bursting of minute subpleural foci of pus or of softening tubercle.

The evidences of consolidation of the lower lobe of the left lung developed rapidly, but almost immediately there appeared, about the middle of the lobe, not far from its posterior border, evidences of rapid softening. A fine canula was introduced at this point to a depth of several inches, but no liquid could be obtained. There were numerous moist, crackling râles over the left lung, and, to a less extent, on the right side; but these were regarded as due to collateral congestion and œdema.

By November 20 free expectoration of purulent matter began; and, as it continued increasing in amount, there was simultaneously a clearing up of the consolidated area. Microscopic examination of the sputa showed elastic fibre, but no bacilli. Large and significant patches of herpes broke out on the left side of the nose, and also on the lips. As the expectoration advanced and the infiltration of the lung lessened, all the obstructive symptoms gradually subsided and the patient's general condition improved. The emphysema also quite rapidly disappeared; the febrile movement subsided; and now, for several days, the temperature has been normal and the patient is apparently convalescing satisfactorily.

There were signs of a small cavity in the lower lobe of the left lung, but these are becoming less distinct. As you will see, the patient is now in all respects quite comfortable. The inequality in the pupils still remains; and this has been an impressive warning to us as to the constant care we



should use in estimating the real significance of isolated symptoms, however striking, in obscure cases.

It does not seem necessary to dwell longer upon the extreme diagnostic and clinical interest of this case. The value of the subcutaneous emphysema, from the stand-point of pathology as well as of diagnosis, was very great. Even more important was the grade and character of the fever. There can be, I think, very little doubt that the nature of this remarkable case has been as above suggested: a suppurative lesion in the posterior mediastinum near the root of the left lung; pressure upon the lower branch of the left bronchus; escape of air from vesicular tissue at that point, and its journey upward to the root of the neck; subsequent invasion of the lower lobe by the pus, with consolidation of the lower lobe and discharge of the pus into a bronchus, thus evacuating the abscess and removing the pressure. It is needless to say that, in spite of the very favorable appearance now presented by the man, there are grave sources of anxiety in respect to the future progress of the case.

*January 5.*—He has continued to do well and is now thoroughly convalescent.

Before closing, I would call your attention to the extraordinary effect which followed the abstraction of blood. All of us who saw his condition before the bleeding, and watched the immediate effect of this, were satisfied that his life was saved thereby. I doubt if any other remedy could have acted so promptly and efficiently. It was the observation of such striking results, when bleeding was used in suitable cases, that gradually led our medical forefathers to rely upon it more and more in grave crises, until its occasional and legitimate use degenerated into almost promiscuous abuse. It is one of the tasks set before clinical medicine to-day to indicate with the greater precision rendered possible by our improved methods of investigation and more full knowledge of the natural history of disease, the exact conditions under which this most powerful remedial measure is to be adopted.

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## ANGINA PECTORIS OF HYSTERICAL ORIGIN.

CLINIC FOR DISEASES OF THE NERVOUS SYSTEM, HOSPICE DE LA SALPÊTRIÈRE, PARIS.

BY J. M. CHARCOT, M.D.,

Professor in the Faculty of Medicine; Physician to Hospital Salpêtrière; Member of the Academy of Medicine, etc., Paris.

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THE hyperæsthetic hysterogenic zones that have their seat in the spinal column, and the zones situated in the left intercostal region, giving pleuralgia, can also give rise, by irradiation, to a certain painful phenomenon sometimes called "pseudo-angina pectoris." This term, false angina, is perhaps not true, for it may well be that angina pectoris is not a malady

that is complete in itself, but rather a symptom that may be seen in a certain number of diseases, and having special characters according to the malady in which it is found, and yet it remains angina pectoris. M. Landouzy showed the possibility of the coexistence of hysterical angina with organic heart-disease, thus giving an example of morbid association of which the concurrence of rheumatism and hysteria is a common example. Liégeois, Cardelli, Axenfeld, Huchard, and others have referred to this hysterical form of angina pectoris.

We desire to call attention to certain peculiarities in this dynamic form of angina in which it differs from the ordinary or organic type. The age at which this malady is observed is of importance. In twenty-eight cases it was seen once at six years of age, once at thirteen, eight times under thirty years, eight times under forty, six times under fifty, and only twice beyond this age. This shows that this form of angina appears usually *under forty years of age*, in contrast to the organic form. It is also curious that of all these twenty-eight cases *only four were males*, and we know that men are mostly attacked by the usual form of angina. It is worthy of remark also that this is often the *first* symptom seen of hysteria in certain cases; it is also remarkable that this symptom is *tenacious*, as it will run through a long series of hysterical troubles. Rigal saw a case of this kind that had two hundred attacks in two years, so that the *frequency* of the attack is a point in diagnosis not to be neglected, while real angina is not at all common in hysterical cases. The beginning of these symptoms is mostly sudden and *at night*, which latter is not usual in real angina. In many of these cases the pain quickly reaches its maximum, the patients saying that it is like iron hooks tearing the skin, passing up the arm and to the neck, usually in the region of the ulnar nerve, and involving the whole left side from above downward. Sometimes it takes a contrary course, beginning in the little finger and going upward, and has even been noticed to commence in the little toe and extend upward.

During the attack the state of the heart and pulse is most variable. In Marie's first observation it was found that the radial pulse of the left side was difficult to determine, one moment beating 90 and at another 130 per minute. In a case of Osgood's it was 140. In fact, there is as great irregularity in the pulse as there is in the respiration. The latter undergoes almost complete arrest, with dyspnoea and oppression. The pupils may be dilated or contracted. During this time the mental state is one of irrepressible terror, with tendency to fainting. It will be noticed also that a "*dream*" is going on during the attacks, and patients are partially aware of their suffering. The duration of the attacks varies from a few minutes to several hours, and we have already spoken of cases that are barely noticeable, or "*fruste*."

It is owing to some moral impression, as anger or annoyance of some kind, that the attack comes on in the hysterical form; but in real angina pectoris it is more often a forced march, fatigue, or some physical cause



that brings on the real attack, which, by the way, is during the day, and *not at night*. These attacks are also irregular and have no tendency to periodicity. In the organic form the pulse and respiration remain calm, as a rule, while the contrary takes place in the hysterical form, which terminates by tears, laughter, and sobs, and is followed by eructations, the emission of a quantity of clear urine, and with the occasional vomiting of blood, especially in the vaso-motor form. Finally, it should not be forgotten that pressure on a hysterogenic zone will bring about an attack of *angina pectoris of hysterical origin*.

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## TWO CASES OF ANGIOMATA OF THE FACE.

SURGICAL CLINIC, HÔPITAL SAINT-LOUIS, PARIS.

BY PROFESSOR PÉAN, M.D.,  
Surgeon to Hospital Saint-Louis, etc., Paris.

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I AM about to operate on two cases of *nævus* to-day. In one of them the ablation of the whole tumor is possible, and in the other we must be satisfied with a cauterization. This is the fourth time we have made use of the galvano-cautery on this same case. These two specimens will allow you to take into account the principal indications and the difficulties in making operations on such tumors, and also enable you to judge of the advantages of the two methods of treatment now in use for such tumors,—namely, ablation and cauterization.

The first patient is a young, robust man, twenty-six years of age. Twelve years ago he noticed a little pimple on his forehead, between his eyebrows, which remained indolent, but which continued to grow until to-day it is as large as a walnut. He is a fine example of the difficulties of surgical diagnosis, as he was sent to us as a case of “sebaceous cyst.” As to the operation itself, it is not difficult, but any one who should undertake such a case lightly, and without the aid of chloroform and proper pincers, under the notion that it was a cyst, would have a bad time of it when the hemorrhage occurred. A thorough examination in this case prevented any mistake. The skin covering the tumor was observed to have some few reddish varicose veins, and on looking at it sideways it was seen to have a slight pulsation, which was synchronous with the man’s pulse and could be felt on palpation. Then the consistency of the mass was irregular and soft, and we could partially reduce it, and, having done so, we could not find any depression of the frontal bone. Besides, on auscultation we found a murmur, which the compression of the two temporal arteries diminished, without stopping completely. Both the pulsation and murmur continued slightly, so that the diagnosis of a *nævus* was evident.

Having ascertained the character of the tumor and taken proper pre-

cautions, the rest is easy. After we have reduced the angiomata our assistants make compression over both temporals and frontals, and we cut into the healthy tissue to the side of the tumor, putting our pincers on everything that bleeds. We open it well, as we must take away all the erectile tissue, otherwise the tumor would return, and the hemorrhage will be so much the less when we take all this tissue away; in fact, you notice that as the operation goes on the bleeding seems to diminish more and more. Now the tumor is entirely out, and notice how small it seems in comparison to what it was when *in situ*. Just observe that we have a very large number of our compressing pincers on the wound. Shall we now ligature it? Not at all; it is unnecessary; the compression of the instruments is quite sufficient, as the tumor is no longer there to act as a pump. So, without using any ligature, I take off at once all the pincers, and you see compression with an antiseptic sponge is sufficient to stop all bleeding. We have now only to apply the sutures and the dressing.

While the assistants are doing this, I shall show you the second case. This is a much more difficult one. This little girl is three years old, her health is far from good, and her parents tell us that when she was born she had a slight mark on the left cheek as large as a silver dollar. This has gradually grown, until now you see the tumor is very large, extending from the right eye across the nose clear around to the ear on the left side, and as low as the lip, passing down to the neck. It can still be reduced to a great extent, and none of you would have any difficulty in saying that it was a *venous angiomata*. Its considerable development has come about in fifteen months, and this fact is very interesting for you. As a rule, the erectile tumors of the face have no tendency to increase rapidly, and when they are small they can be treated by compression and often cured. Any of them that increase rapidly, as this has done, should be treated with the same energy that you would treat a malignant tumor. The ablation of this mass is impossible. When we saw it fifteen months ago we ordered cauterization, six months later we made a second application, and three months afterwards a third. The intervals between the applications of the cautery were too long, but the parents neglected to bring the child, so that the results of treatment are not as yet very brilliant; still, you see that the upper and inner part of the tumor has been cured. The galvano-cautery is here better than the finest of the points you have on the thermo-cautery. We use here a sort of four-needled instrument, and, as the points are very fine, they go in easily and the skin lesion is reduced to a minimum. There is, therefore, but little cicatricial retraction of the skin. The fact, however, that the skin is here about five or six centimetres thick,—or, rather, the erectile tissue is,—and our instrument is only two centimetres long, presents a peculiar difficulty. What shall we do? We must get rid of the blood, and to do so I take two long, flat pincers, and, taking in the whole thickness of the cheek, by putting one of them in the mouth and the other outside, one of our aids holds it, and, having expelled the blood, we



now have a proper thickness to operate upon. According to the region, you must, as clever surgeons, invent a method of compression. Then over the circumscribed area make about thirty cauterizations, which you see does not cause any hemorrhage. This done, do not take off the compression for a few minutes.

It is, of course, necessary to perform quite a number of these operations to cure such difficult cases; and the long time taken, with the difficulties involved, should impress upon your memories the importance of treating mother's marks, or *nævi*, or the erectile tumors (*angiomata*) so soon as possible.

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## ARTERIAL FIBROSIS.

CLINICAL LECTURE DELIVERED AT BELLEVUE HOSPITAL, NEW YORK.

BY ALFRED L. LOOMIS, M.D.,

Professor of Practical Medicine and Pathology at the University Medical College of New York.

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GENTLEMEN,—This girl, nineteen years of age, without any hereditary tendency as far as she knows, was perfectly well up to four months ago, when she began to have hemorrhages from her mouth; with these, and preceding them, she had severe pain in her head. She has never noticed any swelling of her feet, or change in her urine; her menstruation ceased eight months ago. Her eyesight was good up to the beginning of this illness, but since that time her vision has become so imperfect that she is unable to read. She has never had rheumatism, nor can she recall any other symptoms of disease.

The radial arteries are hard and she has a high-tension pulse. The cardiac apex beat is visible over an abnormal area; the veins of the neck are enlarged, and there is visible pulsation in the carotids. Her arteries, although hard, are smooth, like those found in extreme old age. Arterial fibrosis at nineteen years of age is of very rare occurrence, and is usually associated with syphilis. This patient gives no history of syphilis, nor do we find any of the usual manifestations of it in her. The right lobe of the liver is two inches below the free border of the ribs; the spleen is not perceptibly enlarged. At present she has no fever, and her temperature record shows that at times her temperature has been subnormal. Examining her mouth, we find no abnormal appearance of her teeth or gums, but her breath has a distinctly mercurial odor. Since her admission, she has had only one small dose of mercury. Her pupils act slowly to light. Her abdomen is not distended or tympanitic. There is a slight systolic and diastolic murmur heard at the base of the heart, which I should regard of arterial origin. There are no abnormal sounds to be heard over her lungs, yet the patient is evidently very much emaciated.

We have, then, arterial fibrosis, a hypertrophied left heart, a systolic and diastolic murmur at the base, and an enlarged liver. If this is a case of general fibrosis, and it seems reasonable to believe that it is, there should be some change in the kidneys. An examination of the urine shows the specific gravity to be 1008, and this bears out the statement which I have already made to you, that arterial fibrosis is accompanied by urine of low specific gravity. A trace of albumen and hyaline casts are also present. Whenever general fibrosis is sufficiently advanced, the urine will give evidence of renal fibrosis, which is a part of the general disease. It is a pathological law that when a tissue atrophies or undergoes necrosis, however minute the necrosis may be, connective tissue takes its place; hence, if by alcohol, gout, syphilis, or anything else the nutrition of a tissue is interfered with to such an extent that the parenchymatous elements undergo degeneration or necrosis, you will have fibrous tissue developed in their place. This girl, in all probability, has inherited syphilis; in other words, she was born with a tendency to fibroid disease, and we have all the changes in her which are usually met with in old syphilitic subjects, although she is only nineteen years of age. We will not now discuss the question whether or not this fibroid process is real inflammation. Cohnheim says that it is not a hyperplasia of connective tissue due to the ordinary processes of inflammation, but that there is always an interference with the cell nutrition of a tissue in which the fibroid development takes place. This certainly holds good in most cases of arterial fibrosis. Take, for instance, a true gouty subject with an excess of uric acid in his blood which sooner or later leads to an increase in the connective tissue of the intima of his arteries. The arterial tension caused by the excess of uric acid in his blood causes injury to the intima, and fibroid processes are established to repair such injury. The connective tissue resulting from this process is of lower organization than the parenchymatous tissue, and is therefore incorrectly called by some a degeneration, although it is a conservative effort of nature to limit destructive processes. There is another form of degeneration of the muscular wall of an artery, but this is one of the changes found in senile arteries. The form now under discussion does not occur except as a result of an active exciting cause, either hereditary or acquired. This patient's kidney changes are unquestionably secondary to the arterial. It will be a long time before you will again see a girl so young with such extensive arterial changes.

She had an ulceration about one tooth which gave rise to the bleeding about which she has told us.

The outlook is not promising, for this is a process which is essentially progressive, and it has already caused advanced kidney lesions. We use the term "sclerosis" for the arteries and nervous tissues, "cirrhosis" for the kidneys and liver, and "fibroid" for the changes in the heart; although the process is the same in all, and it seems to me better to include them all under the general term "*fibroid processes*." In the heart, the fibroid changes often occur independently of any general fibroid change, but they



are due to the same general or local cause. The changes that cause fibrosis of the heart take place in the minute arteries, and hence it is local, and may be found scattered through the heart in masses. But when the coronary arteries are sufficiently involved at their origin to interfere with the blood-supply of the whole organ, you will find fatty degeneration of the whole heart. The coronary arteries may be the only arteries in the whole body that have undergone fibroid changes, and hence the change may be confined entirely to the heart, although more commonly it is found in all the arteries of the body. Cohnheim says that alcoholic cirrhosis is not an inflammation of the connective tissue of the liver or kidney,—an interstitial hepatitis or nephritis,—but that the alcohol causes degeneration of the tissue cells of the liver or kidney, and this degeneration causes a fibroid substitution; in other words, that it is simply the result of the atrophy of the tissue elements of these organs. Sutton thought there were changes in the capillary vessels which interfered with the nutrition of the tissues, and which therefore gave rise to a connective-tissue inflammation. Hypertrophy of the heart must go along with these changes in the arteries, for just as soon as the artery loses its elasticity and its lumen is obstructed, the heart is called upon for more work, and as a result there is hypertrophy of the left ventricle. This patient has such hypertrophy as a result of her arterial changes. After the functions of the kidneys have been disturbed by the changes in their parenchymatous elements, there is no possibility of recovery, and no amount of specific treatment will do more than give slight temporary relief. Mercury does not arrest these changes when the process is so far advanced.

• I show you, then, a girl of nineteen with general arterial fibrosis. As I have said before, we grow old by our arteries. I can show you persons of seventy with as soft and pliable arteries as in a healthy person of eighteen, who are elastic and vigorous. To such old people death comes by an accident, and not as a result of degenerative changes.

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## *MULTIPLE NEURITIS AND SOME OF ITS COMPLICATIONS.*

CLINICAL LECTURE DELIVERED AT THE PHILADELPHIA HOSPITAL.

BY CHARLES K. MILLS, M.D.,

Neurologist to the Philadelphia Hospital; Professor of Diseases of the Mind and Nervous System at the Philadelphia Polyclinic; Clinical Professor of Nervous Diseases in the Woman's Medical College of Philadelphia.

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MANY cases of the kind that you will see at this lecture come or are brought to this hospital. A dozen years ago, shortly after I became connected with the hospital, the late Dr. J. L. Ludlow, who was for forty years a member of the staff, said to me that I would find many of my patients suffering from "rum pains." He went on to tell me that for

years, in the hospital and outside of it, he had observed that patients addicted to alcohol were often the victims of pains and aches, few or many, isolated or diffused, and located in different parts of the body, but especially in the limbs. His observations were made years before the study of *multiple neuritis*, to which your attention will be directed this morning, had attracted particular attention.

With the aid of illustrative cases, I will develop before you some of the characteristic features of this disease, and will discuss some of its counterfeits and complications, concluding with a few practical points on its diagnosis, prognosis, and treatment. With the help of my resident physician, Dr. Taylor, I have prepared notes of the various cases to be presented, and I will use these notes, but will also in your presence examine and question the patients.

#### ACUTE MULTIPLE NEURITIS OF MILD TYPE.

CASE I.—A. F., a middle-aged woman, had rheumatism when seven years old, and a second attack five years ago, for which she was treated in the Pennsylvania Hospital; her hands and feet were then much swollen, but she made a good recovery. She denies syphilis. For five weeks before admission to the hospital she had been drinking, and two days before, while intoxicated, she had slept out all night in a yard. When she awoke she had pain and loss of power from the knees down; both pain and palsy increased, and she was brought to the hospital by the police patrol. She was partly paralyzed in both lower extremities, being able only to half flex the thighs on the pelvis, and the legs on the thighs; she had double foot-drop, but not marked. She could barely turn the feet upward and inward by anterior tibial action, and abduction of the foot either alone or with dorsal flexion was impossible, but extension of the toes and elevation of the heel could be performed very imperfectly. Above the knees slight loss of power was about uniformly distributed in the various groups of muscles. Pain on standing was present in all the nerve-trunks of the lower extremities; it was marked, but not intense. Lateral squeezing of the foot gave considerable pain. Knee-jerk and muscle-jerk were lost on both sides. Sensation was found to be impaired below the patella and on the inner aspect of the leg. She was hypersensitive on the soles of the feet. Farado-contraction was lost in the peroneal groups, with degeneration reaction to galvanism. The bladder and bowels were unaffected. Her mental condition was one of dulness, forgetfulness, and emotionality, with a tendency both to delirium and to somnolent attacks.

This is the brief record of her condition when admitted, about seven or eight days ago; it has not much changed, but, if at all, for the better.

Let us summarize, examining her in your presence, and stopping now and then to discuss some special feature. Remember that for five weeks before admission she had been drinking, and that two days before she had slept out of doors; alcohol and exposure are both, therefore, etiological factors. Observe that she can use her arms, but shows slight weakness in extending the hands. Observe also the double foot-drop, —or foot-droop, I should perhaps say, in this case. (Fig. 1.) That position is less marked than it was a week since. It is only slightly abnormal, but enough to indicate the peculiarity of the paralysis from which the patient suffers. You have here also a scarcely-demonstrable hand-drop. Fortunately for her, she is improving, and you can see that she can now draw the leg up some distance without much difficulty. She has considerable power in the thigh-flexors, yet you will notice the manner in which she moves her limbs, showing that the muscular power is moderate and that the movements cause some pain. She cannot bend her feet outward or upward fairly and fully. The examination develops the fact that she has a generalized paraparesis,



—that is, partial loss of power everywhere in the lower extremities, but much more marked in the muscles below the knee, and most decided in the dorsal flexors and abductors of the feet,—and that she has considerably improved in the short time that has passed since admission.

You observe the diminished plantar reflex as I tickle and prick her soles. The knee-jerk is not well shown with the patient lying down, but when now she sits up we can test it better, and you also get a better idea of the peculiar position which her feet assume. The test shows—as when admitted—that the knee-jerk is entirely abolished, a fact which also indicates the importance of the examination. Remember that this case of disease is only two weeks old; and one reason that I have brought her before you is because the case is recent, and yet, recent as it is, she has neither knee-jerk nor muscle-jerk. Testing her for sensation, we find that this is diminished in irregular areas. To make this test thoroughly would take at least the entire hour. She has an irregularly-distributed impairment of sensation, to determine which you must examine her limbs everywhere for sensation, as has been done in the ward. Investigations of sensory disturbance are often uncertain and indeterminate. The personal equation—the receptive and registering ability of individuals—differs. Nerves in normal individuals may transmit sensations differently as to time, and patients vary so much that it sometimes takes much hard work to determine the distribution and degree of loss of sensation.

This patient's mental condition is now fairly good. I examined her a week ago, and she was then at times in a state of almost active delirium, one in which her mind wandered a little and in which she exhibited uncertainty and hesitation in her answers. Her mental processes were somewhat obtunded, but under treatment she has improved in this as in other respects.

Before I say anything further about this case, however, I will show you another, a woman who, instead of having been in the hospital for a few days, has been here eight months.

If a victim of the same disease, we will have for study a case of the same character but older and of a more severe type.

#### MULTIPLE NEURITIS OF MODERATE SEVERITY.

CASE II.—M. W., aged twenty-eight, claims always to have been a healthy woman, except that she has a history of measles in childhood and of pleurisy when twenty-three years old. She denies drinking, but this denial is more than doubtful. When the present attack began she was out at service, and was in the habit of going out into the yard with bare feet and wet skirts. Eight months ago she began to have pains in the knees and in the legs from the knees to the toes, worse in the left leg. She had no pain above the knees nor in the back. Both hands were numb and uncomfortable from the second phalangeal joints to the tips of the fingers, but no discomfort was experienced in the rest of the upper limbs. This condition continued for about a month, the paræsthesia growing gradually worse. The sensation is described as resembling at first the feeling of the fingers "asleep," or of pins and needles. Later, the fingers became stiff, and she had sharp pains running down the leg. She was soon obliged to take to bed, because of loss of power in the lower extremities, which increased until she was not able to stand. She entered the hospital three months after her first symptoms, and at that time was still in much pain. As nearly as can be learned, most of the pain left her under treatment three months after entering. From the beginning of the attack she had not only subjective pain, but also hyperæsthesia and tenderness over all parts of the affected limbs, which persisted markedly after her entrance into the hospital, but gradually decreased. At

present she states that her feet and legs feel cold, and she has a numbness of the dorsum of the foot, particularly on the left side.

Her history, then, in brief, is that of a healthy Irishwoman, probably using alcohol, and exposed to wet, suddenly taken with pains in both her lower extremities, and this accompanied by swelling in both ankles. She was then paralyzed and had great pain. Later, you find her somewhat improved,—a decided improvement in the paralysis. You see her limbs are not much atrophied. The power to move her feet has improved, although they show a tendency to dropping. She has far from full control, although she can twist her feet in different directions. She can turn them downward better than upward. She has the same disease as the other woman, in a more severe and more chronic and persisting form.

That some active inflammation is still present I can readily show you. I now have the popliteal nerve, and the moment I roll it under my finger she has great pain. When I take her foot and squeeze it laterally, as in the other case, she has great pain. Finally, this patient has, and indeed both have, or have had, changes in the electrical reactions, but you will have to search for them. She has lost contractility in the anterior tibial and in one or two other muscles, to say the least.

Both of these patients are suffering from multiple neuritis, an inflammation affecting many nerves,—a disease which has been brought prominently before the profession during the last few years, although cases of a similar kind were described seventy years ago. Great attention has been paid in journals and text-books to the disease during the last four or five years, but my experience teaches me that many practitioners are still unfamiliar with the subject. Cases in their early or acute stage are still often set down as myelitis of some form, and in later stages as posterior sclerosis or some other form of chronic spinal degeneration. Just now the nervous wards of this hospital afford me an unusual opportunity to bring before you cases both acute and chronic, both complicated and uncomplicated; and, of course, we have also in large number, for contrast, the spinal counterfeits of the affection. I will therefore devote the hour to a rapid presentation of these cases, with only brief comments, as they speak for themselves in a language which you cannot mistake. You will constantly meet with cases of multiple neuritis in your practice, especially in large cities, and sometimes these are so typical that you cannot be mistaken; but the greatest source of error in diagnosis will probably be from your lack of acquaintance with irregular types of the disorder, cases in which either cerebral or spinal complications, or both, exist, and lead you to overlook and misinterpret the coincident affection of the nerves. Remember, then, as I will illustrate by some of the cases this morning, that you may have spinal or cerebral inflammation, either of membranes or nerve-tissue, in association with the multiple neuritis, or that you may have the latter affection entirely independent of the central complications. Remember also that chronic sclerosis sometimes coincides with either acute or chronic neuritis, and that your skill in diagnosis and prognosis will be most put to the test in connection with these irregular and complicated forms of the disease. In the alcoholic cases particularly brain complications are usually present.



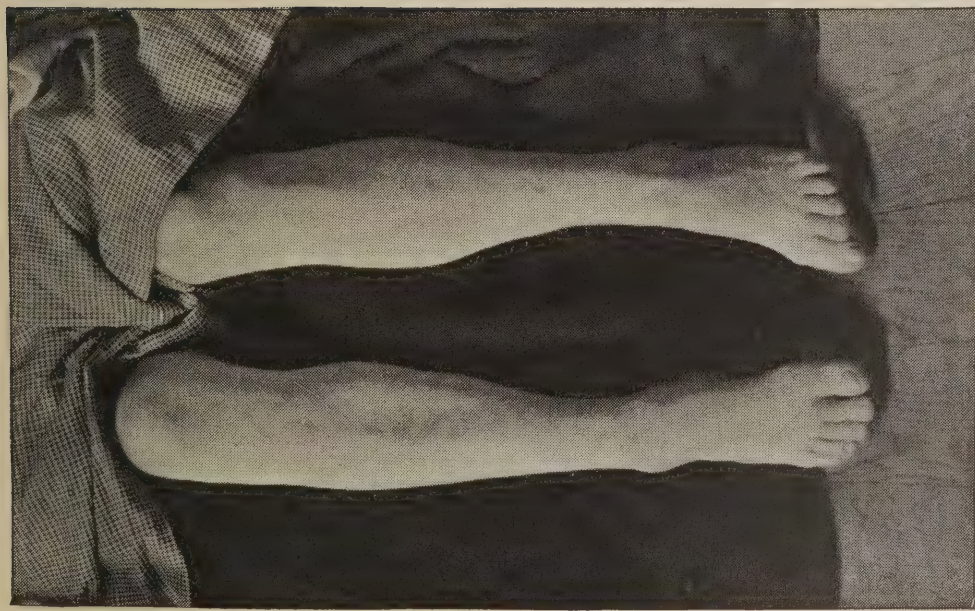


FIG. 1.—Multiple Neuritis. Position of feet and legs.

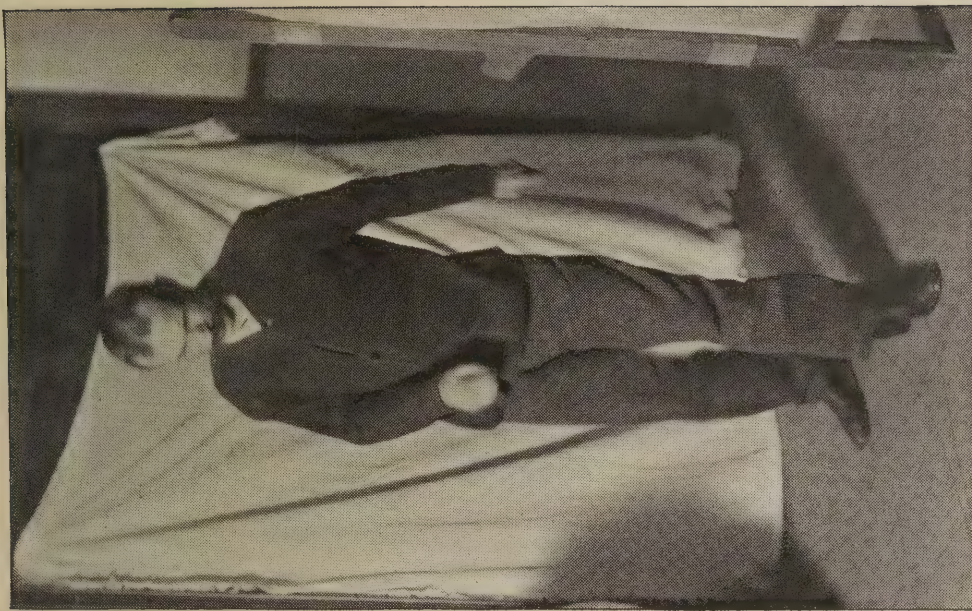


FIG. 2.—Multiple Neuritis. Gait of a patient recovering.





## MULTIPLE NEURITIS OF SEVERE TYPE, WITH VERY SLOW RECOVERY.

CASE III.—This patient is twenty-nine years old, and has been a pretty hard drinker. He denies specific history or excessive use of tobacco. Three years ago, in August, he was "sunstruck;" at least, on a hot day, he fell down in the street unconscious and remained out of his senses for eight days. He had been drinking up to four hours before the "sunstroke," and previously had been in the habit of taking three or four drinks a day, and more on Saturdays. A few days after getting around he began to suffer from headache and pain in the calves of the legs; these pains continued, and he lost power below the knees. The paralysis spread to the thighs and then to the arms; it was accompanied with pain and great tenderness.

The patient says that for eight months he could not move at all. Such recovery of power as he has made has been exceedingly slow. He can now walk a short distance without crutches, with a peculiar loose movement of his knees and ankles. If he stops it is necessary to have some support. He can feel the floor under him perfectly, and appreciate the difference between carpet and hard wood. His knee-jerk, which was lost, has come back.

Most of these patients have been examined so many times for knee-jerk that they can answer for themselves. Like the chickens which, when the preacher came round, put their heads on the block, so when these patients see the doctor coming into the ward they put up their knees to be struck.

He is not markedly emaciated, but his face is thin and he has a sallow, dark complexion. His pupils are unequal,—the left the larger,—but both respond to light. His tongue is tremulous. His hands are weak, the dynamometer registering only 25, right and left. They are wasted, the metatarsal bone being plainly visible. The deltoid is atrophied, but the trapezius is not. The legs are thin. Muscular irritability does not seem much impaired; percussion fails to produce contraction, and no fibrillary twitching is present. He still has slight tenderness over the posterior tibial nerve. The feet appear to be normal; the thighs are proportionately thin compared with the legs. Some muscles still show degeneration reactions. The bladder and rectum have never been affected.

Watch this man walk. For a long time he could not walk at all; but he now can walk,—even a little without his crutches. He is comparatively firm on his feet, but has a curious gait. (Fig. 2.) It is not a true ataxic gait, although it might be thought to be by a careless observer. It is a gait due to the marked paresis or paralysis in certain muscular groups.

## MULTIPLE NEURITIS OF SEVERE TYPE COMING ON WITH ACUTE RHEUMATISM; VERY SLOW RECOVERY.

CASE IV.—Here is a man from Dr. Dercum's wards, who has been sick for two years and a half. He will now tell us how he was taken sick. First of all we must sometimes confess our sins. Q. "Are you a drinking man?" A. "Yes." Q. "Did you drink heavily?" A. "Yes." Q. "Tell me how you were taken sick." A. "I was taken with pain in my knees and then lost power. In about a month I was totally disabled." Q. "Have you been disabled since?" A. "I have not been able to walk since, now two years and a half, but I am beginning to use my legs. Some improvement began about six months since."

His more complete history is, that two years and a half ago he had an attack of inflammatory rheumatism lasting five months. For the first two months he was treated at home, and was then admitted to this hospital, where he has since remained. The patient states that all the joints of his body were involved, and

that "he had pains all over him." When the joint-trouble subsided and he was convalescent from the acute attack, it was found that he had lost power in his legs. He could not stand a moment, his legs spreading out under him, and he could not feel anything under his feet. At first he had loss of sensation below the knee, but above the knee he was very tender to the touch; later, he also became hyperæsthetic below the knee. He had sharp, shooting pains through the calf-muscles and behind the knees, accompanied sometimes with cramps. He had also a wearying ache in the back and across the sacrum and hips, and was troubled with browaches and pains in the eyeballs and temples, but these have ceased. The left arm was affected the same way as the legs. He had no return of rheumatism until last January, when one wrist swelled; his pains are affected by the weather. He has continued to improve, but only slowly. At present he has aching pains in the sacral region, and also in the legs and behind the knees; he has some tenderness over the posterior tibial region. He can feel the ground almost perfectly, a slight variation, however, from normal remaining. He cannot stand alone, but feels as if something in his back drew him sharply backward.

This man was totally paralyzed; indeed, he is badly paralyzed yet. He falls sometimes when he endeavors to walk; he walks with great difficulty with crutches; supporting his body with great effort, and with much tremor, he makes out to walk without falling, but sways back and forth, and if he is not careful he will go down suddenly, as I have seen him fall in the ward. Perhaps he will not wholly recover.

He tells us that he had pain and swelling both in the joints and between the joints, and that the feet were swollen. His knee-jerk was abolished, but now on testing we get a pretty good, brisk jerk. That is an important point: the knee-jerk does return; when a man's knee-jerk is gone, it is not necessarily gone forever. I have seen case after case in which the knee-jerk was totally abolished, but in which it eventually returned. He has in a varying degree the same conditions as were shown to you in the other more recent cases. His legs were wasted, and are still to a considerable extent, and electrical changes have been present.

Both of these cases, and the first in particular, teach us that we should be slow to give an absolutely unfavorable prognosis in even the severest cases of multiple neuritis. The first patient has been paralyzed, unable to work, and physically and financially a useless member of the community for three years; the second, for nearly this time. The first of the cases, at least, may, I think, in time make a complete recovery, although this desirable consummation may not be reached for a year or two more. Recovery in the second case is doubtful, but is not impossible. When it is considered what a myriad of nerves were involved in the inflammation and subsequent degeneration, it is not at all remarkable that the progress towards recovery is so slow. Encouragement and treatment should not be discontinued too soon. Massage, Swedish movements,—passive, active, and duplicated,—galvanic electricity, strychnine by the mouth and hypodermically, stimulating douches and baths, should be perseveringly used in these cases, although it is well at times to stop treatment for two or three weeks in order to guard against overdriving the reviving and renewing tissues. In spite of all treatment, in some instances the neuritis has been so destructive that the nerves have been practically wiped out, and nothing is left as a basis for regenerative treatment.



## MULTIPLE NEURITIS AND POSTERIOR SCLEROSIS, BOTH DEVELOPED ACUTELY; RECOVERY FROM THE NEURITIS AND PERSISTENCE OF THE SCLEROSIS.

CASE V.—This man came to the hospital more than two years ago, and has therefore been under my eyes for a long time, and I know much of his history from observation. He was a huckster, and, after the manner of hucksters, was much exposed to bad whiskey and bad weather. One day he partially lost power in one of his legs; still, he was able to go on with his work; in a day or two afterwards he lost some power in his other leg. He managed to drag himself to this hospital, and was in my wards two years and four months ago. For three days his suffering was moderate, when suddenly it was enormously increased. I remember, as if it were yesterday, coming into the ward and seeing this man, his face a picture of pain and distress, his limbs drawn up, and shrinking and crying out at the slightest handling of skin, muscles, or joints. For days we could not handle his legs, and it was six or seven weeks before the pain had greatly subsided, but after this had taken place, I examined him again, and found the symptoms of posterior spinal sclerosis. Instead of improving, as the other patients, he has lost and continues to lose ground. He now cannot keep his feet without crutches, and can scarcely do so with them.

Let me question him. Q. "Do you still have pains?" A. "Yes, sir." Q. "How often?" A. "Frequently." Q. "What are they like?" A. "They are sharp pains running like a knife through me." Q. "Do these pains come and go?" A. "Yes." Q. "How long do the attacks of pain last?" A. "They may last for a minute, or an hour or more when there is great pain. Darting pains pass through me almost enough to take me out of the chair."

This man has no knee-jerk, and never will have, I am afraid. He has great disorder of co-ordination, and suffers, as just described, with extreme lancinating pains.

Testing for sensation, it is found that retardation for touch is present. It requires four seconds by the watch before he can recognize a touch on the foot. With hot and with cold water, and with sharp points, he also shows retardation; in brief, he has the sense of touch, pain, and temperature, but all these sensations are retarded in somewhat varying degrees; the most for touch, the next for pain, and the least for temperature.

He has also involuntary clonic spasms, which are hard to explain. While I am examining him with my hand beneath the thigh, I can feel the flexor muscles contracting, and his leg begins to jerk and flop. In the last two years he has developed tubercular disease, and he may have incipient tubercular disease of the spine combined with some pachymeningeal trouble. It is a curiously complex case. You will rarely find a case actually attacked with acute multiple neuritis and acute posterior sclerosis at the same time. The multiple neuritis got well and the posterior sclerosis remains. He has now genuine locomotor ataxia. He has also some pain and tenderness on moving his trunk, and may have complicating osteitis, caries, or pachymeningitis.

For the past year or two he has had a cough, which has gradually grown worse, and is accompanied with sharp pains in the side. His weight is much reduced.

This patient brings to our minds the question of the various relationships between posterior sclerosis and neuritis, whether multiple, diffuse, or localized. At present the case is one of confirmed locomotor ataxia, due to persisting spinal lesion, according to our most positive canons of diagnosis; and, certain as I am of this diagnosis, I am just as sure that at the onset he had typical symptoms of multiple neuritis, probably associated with myositis. Multiple neuritis and posterior sclerosis both developing at the

same time acutely and in the same case is not a common combination of these diseases. Leyden, a pioneer in the study of multiple neuritis, has, among others, paid close attention to the relationships which exist between locomotor ataxia and true multiple neuritis. It is now well known to all experienced neurologists that in many cases of genuine locomotor ataxia the peripheral nerves, as well as the spinal cord, are degenerated, and it has indeed been held that most cases of locomotor ataxia have a peripheral origin, the cord becoming affected comparatively late. It is, at any rate, quite certain that neuritis more or less diffused is frequently present in cases of ataxia. Many of the complicating symptoms of the ataxia—sensory, trophic, motor, and visceral—may depend upon the concurrent neuritis. The muscular atrophies which in a fair percentage of cases are present, and which I have seen a number of times in the wards of this hospital, according to Déjerine, are the result not of extension of the disease to the anterior horns, but rather of a degenerative neuritis particularly attacking the intramuscular nerves.

The patient, however, is not brought before you because his case is illustrative of any of these recorded relations, but because it shows an association of the most wide-spread character between the two diseases at their onset and in their acute stages, and because, also, it exhibits the persistence of the spinal affection after the subsidence of the acute symptoms. I do not recall any record of such an association of phenomena. This patient as you now see him is not a case of pseudo-tabes, but he has all the distinctive marks of a genuine chronic posterior spinal sclerosis, with probably some added meningeal or bone disease.

This term, pseudo-tabes, has been usually applied to cases of multiple neuritis in which the patients retain their feet and show considerable incoordination with some loss of power. Occasionally such cases very closely simulate posterior spinal sclerosis, and I have examined several in consultation, in which for a longer or shorter time they had been supposed to be genuine locomotor ataxia. In two such cases seen by me recently an exceedingly grave prognosis was given, but both have recovered and are now engaged at their ordinary vocations. Under the head of pseudo-tabes, however, still other cases have been reported in which no organic changes either in the spinal cord or in the spinal nerves or nerve-roots have been present,—neurasthenic or hysterical disorders in which the phenomena closely resemble those of either form of multiple neuritis or of spinal ataxia.

This case, again, is of interest simply because of its acute onset, independently of the question of the early concurrence of the disease with typical multiple neuritis. It is so well known as to be scarcely worthy of repetition that locomotor ataxia due to posterior sclerosis usually comes on slowly and often insidiously, the first stage of the disease in some instances even lasting for many years. It is by no means so well known that the disease may develop acutely, in a few weeks or possibly in a few days,



originating sometimes almost explosively. The occasional abrupt appearance of sclerosis has been compared by some one—I think it was Wilks—to the sudden occurrence of some eruptive diseases, nodules, or areas, or tracts of sclerosis erupting in various parts of the cerebro-spinal system. I have known a few cases of posterior and of disseminated sclerosis to come on suddenly or with great rapidity. The next case I will show you is one in which apparently a fully-fledged ataxia grew to maturity in the short space of six weeks; but, as my time is limited, I will simply dwell on the case sufficiently to develop the proofs of its true sclerotic nature and the history of its rapid origination.

#### ACUTE POSTERIOR SCLEROSIS, WITH DOUBTFUL MULTIPLE NEURITIS AT THE ONSET.

CASE VI.—J. M., aged forty-seven, is a laborer whose mother died of phthisis. Ten years ago he had “malaria” and right-sided pleurisy, which, he states, have returned whenever he has had a cold. He has suffered with an occasional cough, and his sputa have been sometimes streaked with blood. He had gonorrhœa fifteen years ago. Six weeks before admission to the hospital he began to have shooting pains in his thighs from his hips down, and also from his knees down, as if pins and needles were sticking in them, and in a day or two girdling pains around his body. The pains in his legs were worse in the mornings, and after he had walked around awhile they would pass away. When he was washing himself, if he shut his eyes he would feel giddy and nearly fall. His legs were somewhat sensitive to touch, and the soles of his feet felt numb. The knee-jerks were lost. The man insists that all these troubles came on suddenly after exposure.

Questioning this patient, I find that he was a drinking man, and it is possible that he at the start, like the last case shown, had some multiple neuritis combined with his acute cord-disease, but, from the statements I have obtained from him, the nerve symptoms were at least not prominent. The case is one in which either the whole disorder developed acutely or the early stage of it was practically latent before the period to which he attributes the abrupt beginning of the affection. He says that at times for many years he has had rheumatic aches or pains, but that these were never of a darting or shooting character. As he describes them, they would seem to have been more like the pains of a coming-and-going neuritis due to rheumatism or alcohol.

Putzel<sup>1</sup> has published a short communication on the pathological anatomy of acute locomotor ataxia, recording briefly a case which came under his observation. The post-mortem examination revealed exquisite sclerosis of the posterior columns throughout their entire extent, and what seemed to be a multiple sclerosis in various other parts of the cord, the gray matter, however, appearing entirely normal. In commenting on this case, he says that, if we take into consideration both the histological appearances and the clinical history,—the latter that of rapid loss of power and the acute onset of the ataxia, with the subsequent disappearance of the paralysis,—he believes we are justified in concluding that the disease was primarily a diffuse myelitis, and that this inflammation cleared up in great measure in all other parts of the cord except the posterior columns,

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<sup>1</sup> Journal of Nervous and Mental Diseases, April, 1885.

in which it not only remained but advanced. Vulpian, who is cited by Putzel, mentions that ataxia is sometimes secondary to other diseases of the cord, as Pott's disease or compression of the cord from other causes, chronic spinal meningitis, meningomyelitis, chronic pachymeningitis, descending secondary lateral leucomyelitis, etc.

Having given instances of uncomplicated or nearly pure multiple neuritis, and also of the same affection complicated with disease of the spinal cord, and having discussed the methods in which the nerve- and the cord-disease interblend, I can appropriately close the lecture by showing you a case in which multiple neuritis has been complicated with marked cerebral disturbance. While the differentiation of diseases of the nervous system according to the various portions of the cerebro-spinal axis attacked is an important advance in practical medicine, it is equally important, as I stated early in the lecture, that we should have clear ideas as to the tendency to a concurrence of disease in two or more portions of the nervous system. All diseases produced by artificial toxic agents or by the toxic influence of infectious diseases—affections, in other words, due to such agents as alcohol, arsenic, lead, mercury, or following such diseases as syphilis, diphtheria, scarlet fever, measles, whooping-cough, etc.—may have inflammatory lesions anywhere and everywhere in the nervous system,—in the brain or in the spinal cord or in their membranes, in the cranial or spinal nerves or in their sheaths, and in the nerves or ganglia of the vaso-motor or so-called sympathetic system. The poisons are protoplasmic, and one, or many, or any part of the nervous system, and indeed any organs or tissues in varying degree, may be assaulted in a ratio dependent upon the activity of the virus and conditions of predisposition. Looked at in this comprehensive way, the various complications and combinations of affections such as we are considering to-day are easily understood. Given, for example, a history of alcohol, and a complex of symptoms referable to intracranial, intraspinal, or peripheral lesions, we need not be confused in our efforts at diagnosis and treatment because the cases do not present typical pictures according to text-book classifications.

The cerebral disturbances which accompany cases of multiple neuritis may be of the mildest or gravest character or of any degree of gravity. Not a few such cases have a fatal issue; some make partial recoveries; others recover entirely. These cases have been described under a variety of names, such as alcoholic paralysis, or alcoholic delirium, or alcoholic insanity, and many such cases have been described, particularly during the last few years. The only case of this kind which I have the opportunity to exhibit in the present lecture is one which differs somewhat from most of those which have been detailed in that the man has had, in association with some general sensory and paralytic symptoms due to nerve-inflammation, a partial hemiplegia, from which he nearly recovered, and which was in all probability the result of a local congestive or hemorrhagic lesion of the brain.



## MULTIPLE NEURITIS WITH CEREBRAL COMPLICATIONS.

CASE VII.—This man, aged fifty-five, a carpenter, six months ago got very wet. He had not been drinking for two weeks previous, but prior to this period he had been taking from five to ten drinks a day with little food. He felt great pain across the sacrum and hips, which increased, but in the night, after getting warm in bed, the pain eased a little, and in the morning he was worse again, so as to be disabled. The pain continued for five or six days, diffusing downward to the calves and feet; it was wearing, but not sharp. The diagnosis of rheumatism was at first made. He grew rapidly worse, became feverish, and was put to bed and kept there four or five weeks; at times he was delirious. When convalescing it was noticed that his mouth was twisted to the left side. He had had a slight stroke of paralysis on the right side; the right leg was most affected. It was three or four months before he recovered the partial use of this leg. For a long time after this he felt sore in the back of the head and also had numbness in both hands. At present, as I show you, his right foot has not as much power as the left, and the toes cannot be moved as on the other side. On the dorsum of the right foot is an area insensible to pain; on the soles of both feet near the toes sensation to pain is a little diminished. Knee-jerk is diminished on both sides, but especially the right. He has stinging and burning pains in the feet, also soreness in the thighs. He cannot sit on anything hard unless he can touch the floor and lift his thighs. He cannot cross the knees on account of pain, and has sharp pain on squeezing the right foot.

This man's history is that he took ale and beer with his lunch and as the main part of his lunch, a not uncommon story for Blockley patients suffering from neuritis. This is one of the ways of developing this disease. You will find men and women who almost live on beer and whiskey. It is said that multiple neuritis is not very common among beer-drinkers, but I know that beer, champagne, or whiskey will produce multiple neuritis. Among beer-drinking women I have seen a number of cases of multiple neuritis. I remember one woman who got nearly well, and then sent out for a pitcher of beer and commenced drinking again. Soon the old symptoms redeveloped, with the addition of serious brain-symptoms, and she died. If such cases are not watched they will kill themselves by relapsing into their former habits just as they are getting well.

The commoner type of combined multiple neuritis and cerebral alcoholic disease, as I have seen the combination, usually presents, when at its height, more or less complete paralysis of the extremities, with great hyperæsthesia, irregular anæsthesia, changes in the appearance of the skin, absent knee-jerk, and marked excitement, or the opposite condition of apathy, with strange delusions, which may be hallucinatory, illusional, or notional; and cases of this type seem to die or recover in almost equal numbers, although the chances, if the patients are well managed, are in favor of recovery.

Not long since I was called out of the city to see such a patient, a young lawyer, who had led both a hard-working and a fast life. He was addicted to sexual excesses, and was a steady and occasionally an excessive drinker. After a debauch he had diplopia, unilateral ptosis, marked tremor of the hands, and a staggering gait, with at first a little delirium of a muttering kind and some delusions of exaltation. His breath was offensive, his tongue coated, and his bowels constipated; but his pulse and temperature showed no particular increase or change. Inco-ordination in both

the upper and lower extremities was very marked. He had extreme sensitiveness everywhere in the lower extremities; knee-jerk was absent, and in addition to the ataxic phenomena he had paresis in various muscular groups, particularly in the dorsal flexors of the feet. He was placed in bed, with attendants to care for him. His physical symptoms continued of pretty much the same character; but mentally he exhibited from time to time alternations of stuporous, apathetic, and excited states, with a constant current or undercurrent of hallucinations and delusions. Occasionally he showed a tendency to violence, but was easily controlled. He eventually recovered entirely.

The best method of treating cases of multiple neuritis is by no means always easy to decide. The treatment must differ somewhat according as the case is in an early, a middle, or a late stage. In the early stage, particularly of the severe cases, the treatment should be actively and aggressively anti-inflammatory and pain-relieving. The suffering of some of the patients affected with multiple neuritis is almost indescribable, and it is of the utmost importance to relieve this promptly, if possible. In the first place, the patient should be put as nearly as may be at absolute rest, in the full meaning of the word absolute. Attention should be paid to the character of the bed; it should not be too hard, and should be as free as possible from knots and ridges. Much the same care should be taken with patients of this kind as with cases of fracture; the handling and movement necessary in feeding the patient or in attending to his evacuations should be reduced to a minimum.

In nearly all cases the patient should at once be deprived entirely of alcohol. Occasionally a measure so heroic as this might have some danger in old broken-down toppers, but in the majority of cases the alcohol should be withdrawn at once, and I have rarely seen any harm result from this procedure. If the use of any alcohol is retained, it will be best given in the form of a weak milk punch two or three times a day. While, however, the alcohol should be removed, the patient should be carefully nourished. In order to accomplish this, it will sometimes be particularly necessary to pay attention to the condition of the stomach.

In a few cases bloodletting may be of advantage. Before resorting to general venesection, however, the patient's general condition should be carefully considered. Many old alcoholics are badly broken down and would react badly from general bloodletting. A few cases, however, with sthenic symptoms, and with evidences of conditions of congestion or inflammation of the brain and spinal cord, in addition to the neuritis, can be advantageously treated by careful venesection,—those, for instance, like Cases V. and VI., in which symptoms of acute congestion or inflammation of the spinal cord were combined with multiple neuritis.

The pain and tenderness must be relieved, and to relieve these several things must receive attention. Various local applications have been recommended and may be tried. One difficulty is the large surfaces which must be covered,—entire limbs, and almost the entire body in some cases. Very hot fomentations or poultices can be applied to the limbs every two or three hours for



ten or fifteen minutes at a time. Instead of these, rapidly-alternating applications of very hot and very cold water may be used, but care should be taken when these are resorted to not to be careless or slow. A large sponge or soft towel is dipped first in very hot and another in very cold water, and one is made to rapidly follow the other up and down the limb. If used properly, this makes an agreeable and useful method of local sedation or counter-irritation.

Opiates in various forms can be used for the relief of the pain. One of the best methods of administration is hypodermically, giving the one-sixth of a grain of morphine and the one-one-hundredth or one-one-hundred-and-twentieth of a grain of atropine. The hypodermic injection need not be given in the most hyperæsthetic areas. One, two, or three injections a day may sometimes be resorted to with advantage.

It is a good plan in the early stage to give an anodyne and a febrifuge, —as, a mixture containing morphine, with citrate of potassium, spirit of Mindererus, and camphor-water. If the patient has a weak heart and is broken down from alcohol or other cause, care must be taken in the administration of remedies. It is well, sometimes, in such cases to give good-sized doses of nux vomica, strychnine, erythroxylon, preparations of cinchona, or digitalis. Nourishment in the form of milk, beef extracts, tender meats, and soft foods generally must certainly be given.

In the early stages particularly, and at any stage in which pain or hyperæsthesia is a prominent manifestation, salicylic acid, salicylate of sodium, or some other salicylate, salicin, salol, or oil of gaultheria,—all remedies, of course, of the same general character,—may be administered with great advantage; but which of these various preparations should be first selected it is somewhat difficult to say. My own preference is to begin with the salicylate of sodium, fifteen or twenty grains, repeated every four hours, or even oftener at first, watching the patient's condition and diminishing the dose if it appear to weaken him.

In some cases even thirty grains of the salicylate of sodium can be taken as often as four or five times a day, and will sometimes cause speedy relief of the most painful symptoms. In cases with a rheumatic element this treatment is one of the very best. Of the drugs allied to sodium salicylate, oil of gaultheria is next in value. It is wonderfully efficacious in relieving nerve-inflammation, but unfortunately, owing to its acrid properties, it sometimes disagrees with the stomach, and may prove very depressing, like all the salicylic preparations. It can be used in doses of from five to twenty minims. In severe cases of neuritis it is perhaps better to begin with doses of ten or fifteen minims, which may be administered in an emulsion so as to give a tablespoonful dose.

When cerebral symptoms are prominent, it will often be found advantageous to administer bromide of sodium, potassium, or lithium, or antipyrin or antifebrin, in addition to the salicylates or iodides, and to the use of opiates and local applications.

In cases with a syphilitic history I have found the best results from the conjoined use of inunctions of mercury and the internal administration of sodium iodide and sodium bromide in doses of from fifteen to twenty grains each. Malarial cases should be treated with large doses of quinine and arsenic, or the salicylate of quinia or of cinchonidia can be given with the most decided advantage. In lead cases chloride of ammonium and either the potassium or sodium iodide should be resorted to to assist in elimination. Cases due to mercury or arsenic are to be treated on general principles, eliminating or constitutional remedies not proving so serviceable. In lingering, chronic cases hypodermic injections of strychnine should be tried.

Baths, either simple warm or hot baths, or electrical or medicated, are useful in the subacute or chronic stage of multiple neuritis. These should be used as often as possible, but always carefully, not unduly exposing the patient in a cold room, or allowing the limb to grow cold or to remain too long wet. The baths may be either local or general,—that is, the feet or a limb may be placed in the warm or hot water, or the whole body may be carefully immersed. Ordinary warm baths are best used at night, and will help the patient to sleep.

Massage and Swedish movements are remedies of value if used in the appropriate stages and in the correct way. It is not well to begin either too early or to wait too long. In the most acute stage, or in the most severe varieties of multiple neuritis, even the gentlest massage would be practically impossible. The patients can scarcely endure to be touched, let alone to have stroking, kneading, etc., employed. On the other hand, it is not advisable to wait until all pain and tenderness have disappeared. When the superficial tenderness and the extreme pain have subsided, massage should be begun. It should at first be of the gentlest character and only for a brief time; gradually both the thoroughness and the length of the treatment should be increased, until eventually massage in all its varieties—stroking, friction, kneading, and percussion—should be thoroughly employed over a period of at least an hour. It is in the stage of subacute or chronic neuritis, with progressing recovery from the true inflammatory condition, that the duration of the entire case can be largely modified by massage and galvanism.

It is sometimes an excellent plan to apply anodyne and resolvent ointments by means of massage. A good ointment to use for the relief of pain and for actual effect upon the neuritis is aconitia ointment, or aconitine made up with lanoline. Even small quantities of mercurial ointment or a mixture of mercurial and belladonna ointment may be used in this way. Morphine, atropine, hyoscine, etc., may be added to the oleates or to vaseline. Liniments made up with oil may be used during a whole or a part of the general massage; thus, sweet oil, cocoanut oil, etc., may be combined with tincture of aconite root, or chloroform or the oil of origanum may be used in some combination in a liniment.

If the patient stands it well or is improved by means of massage,



either simple or medicated, in the course of two or three weeks, Swedish movements, at first of the passive and later either of the duplicated active or of the independent active variety, can be used. Just how far these may be employed with advantage can be told by a masseur or a masseuse of tact and experience. Returning movements are to be coaxed, the will is to be trained back into the muscles, contractures are to be carefully overcome,—in fact, the patient's unfolding neural and muscular powers are to be encouraged and helped onward. With massage, Swedish movements, and electricity, properly employed, the length of the period of recovery and restoration may be decreased by weeks or even by months.

Electricity is used in several ways for as many indications. In the very acute stages it should not be resorted to at all; but, when the excessive pain and hyperæsthesia have in a measure subsided, the use of very mild galvanic currents, uninterrupted, and passed through sponge or absorbent cotton electrodes of two to three inches in diameter, is sometimes beneficial even in the relief of the pain and inflammation. Experience should guide in this matter. If a patient is made worse by one or two mild applications, further treatment should not be given up entirely, but should be postponed for another week or two. This use of galvanism with weak currents and large electrodes is for anodyne purposes. The Adamkiewicz's electrode, for the application of such remedies as chloroform by means of electricity, is worthy of trial. After the active inflammation has largely or altogether subsided, electricity, either in the form of galvanism or faradism, will assist very much in the restoration of the degenerated nerves and muscles. If contractions can be produced by faradism, this form of electricity, which is usually the most convenient for application, may be employed; but if no response can be thus obtained, resort should be had to a slowly-interrupted galvanic current.

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## *DIVERTICULUM OF GALL-BLADDER; HERNIOTOMY; BOW-LEGS; OSTEOTOMY AND OSTEOCLASIS COMPARED.*

SELECTED CASES FROM CLINICS AT RUSH MEDICAL COLLEGE, CHICAGO.

BY JOHN B. HAMILTON, M.D., LL.D.,

Professor of Principles of Surgery and Clinical Surgery, Rush Medical College, Chicago; Professor of Surgery, Chicago Polyclinic; Surgeon U. S. Marine Hospital Service, and Surgeon to Presbyterian Hospital, Chicago.

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## *DIVERTICULUM OF GALL-BLADDER; INCISION; REMOVAL OF GALL-STONES; RECOVERY.*

CASE I.—J. C., aged eighteen, of Italian parentage, came before the class, having a fluctuating swelling on the right side about the level of the umbilicus and distant five centimetres. There was marked protrusion beyond the abdominal wall, and there was an impulse on coughing. His complexion was normal, the functions of his

various organs good. The history of the case, as related by the patient, indicated no abnormal condition except the swelling.

The patient was etherized, and an incision made directly into the sac. Twenty-seven faceted gall-stones were easily turned out of the wound. They were lying close together in the sac, which also contained biliary-colored viscid fluid. The sac was then incised and closed at its neck by catgut sutures. The wound was irrigated with sublimated solution (1 to 4000), and closed with silk-worm gut. The boy showed no untoward symptoms, and was brought to the clinic a week later with the wound entirely healed. It subsequently reopened, and a clear albuminous fluid, looking like saliva, was poured out through the minute opening. This was believed to be pancreatic fluid, coming doubtless by regurgitation from the common duct. The fistula was injected with tincture of iodine at three successive clinics, and it closed without further difficulty.

### ENORMOUS LIPOMATOUS HERNIA; OPERATION FOR RADICAL CURE; RECOVERY.

CASE II.—F. G., male, aged fifty, was admitted to the Presbyterian Hospital, suffering from an enormous incarcerated hernia of the right side, extending into the scrotum, which was so enlarged as to reach the middle of the thigh. The patient had been wearing a truss over the neck of the unreduced hernia, and there was some pain. The patient was etherized and a long incision made directly over the external ring and extending well into the scrotum. The sac was then incised, and a very large mass of omentum was rolled out of the wound; the incarcerated intestine was then freed from its adhesions and returned to the abdomen; the omental mass was then spread out and ligated by six or seven ligatures placed by transfixion so as to prevent hemorrhage from the wide stump. The mass included in the ligatures (about two kilogrammes) was then excised. The stump, however, was so large that the abdominal incision had to be extended upward for a distance of five centimetres, to allow its return to the abdomen. There was then left in sight an enormous sac and an incision about thirty-five centimetres long. The dissection and removal of the sac was considered inadvisable, and it was cut across at the neck. The cord was then sought for, freed from its attachments, and brought to the upper part of the wound; the upper portion of the cut end of the sac was brought together by catgut sutures, and the pillars of the ring were approximated by a "purse-string" ligature of stout catgut and the external wound was closed. Drainage by a rubber tube was maintained for several days. There was some suppuration in the scrotal wound, but the pillars of the ring remained firm. Under treatment the scrotal wound healed, and in eight weeks from the date of the operation the patient walked out of the hospital cured.

### INGUINAL HERNIA; OPERATION FOR THE RADICAL CURE; RECOVERY.

CASE III.—B. C. M., aged twenty-five, theological student, came to the clinic suffering from an inguinal hernia extending into the scrotum. Examination showed a small, rather tight opening at the neck of the sac, but the hernia was reducible. An incision was made into the sac, and the intestine returned into the abdomen. The sac was then dissected out, ligated with catgut sutures, and cut off. The cord was then freed from its attachments and brought to the top of the incision. The pillars of the ring were then brought together by a stout catgut ligature, and the external wound closed by interrupted sutures of the silk-worm-gut. No drainage was used, and the wound healed by primary union, the ring remaining closed.

In all cases of herniotomy it is extremely important that the patient shall remain on his back for a period of three weeks from the date of



operation, to prevent any pressure-strain on the tissues so recently united. After the operation the patient is required to use the bedpan as occasion requires, and is on no account allowed to arise to a sitting or upright position.

### DOUBLE BOW-LEGS; OSTEOTOMY AND OSTEOCLASIS.

CASE IV.—A. A., aged two, came into the clinic (July 25) with double bow-legs. When the child stood on the table before the class, with the knees and ankles touching, there was a space of about ten centimetres between the tibiæ at the middle of the shaft.

The child was anæsthetized by chloroform, and an incision made over the inner surface of the left tibia down to the periosteum; the periosteum was then incised by longitudinal incision and carefully pushed back from the bone, until a wide chisel could be placed within it. The bone was then severed with a few blows of the mallet, and the chisel withdrawn; by extension of the foot, the limb was brought to a straight position, the fibula offering no obstacle. There was then left a wedge-shaped opening in the shaft of the tibia and a longitudinal slit in the periosteum. The periosteal opening was closed by catgut sutures, the external wound closed by silk-worm-gut sutures, and the leg enveloped in cotton and covered by a plaster bandage. In three weeks union was firm and the leg entirely straight. There was an elevated cicatrix over the wound, which was slightly tender. October 10, the right leg was fractured by the osteoclast, both bones being involved in the curvature. The well-padded loops of the instrument prevented any wound of the skin. The leg was then placed in position by extension and a plaster-of-Paris bandage applied. Union was firm in three weeks and there was no scar. It is obvious that osteoclasia is preferable to osteotomy in a majority of these cases, the difference being precisely that between a compound and a simple fracture.

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## CONVALESCENCE IN TYPHOID FEVER.

CLINICAL LECTURE DELIVERED AT WESTERN PENNSYLVANIA HOSPITAL.

BY J. CHRIS LANGE, M.D.,

Professor of Practice in the Western Pennsylvania Medical College.

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GENTLEMEN,—You have twice before seen this patient. It was during the course of a severe but classical typhoid fever. His disease presented no complications nor accidents, and his treatment consisted alone of hygienic, dietetic, and regimenal measures. His highest temperature was 104° F. at evening near the end of his second week, his average pulse-rate 115, his diarrhœa moderate, and his “typhoid state” manifested alone by its least grave phenomenon, subsultus tendinum. His restoration to health demonstrates the propriety of his treatment without drugs and medicines. He is a convalescent.

What, gentlemen, is a convalescent? What are the conditions of the solids and fluids of the body after the termination of severe and protracted diseases? We know the lesions which for four weeks have been perfected

in this patient. They are fatty degenerations. We know that they were progressive until now, until this patient's blood was freed from the bacillus of Eberth or its ptomaine, until his temperature reached  $98\frac{1}{2}^{\circ}$  F.,—until his convalescence, in short. But for the sequel which he now has, and to show you which I have had him brought before you, he is well, he is no longer sick. That comparative condition which is called health is again restored to him. Nevertheless, he is stripped of all adipose tissue, his muscular system is atrophied, and what remains of it is flabby indeed. He has lost much of his flesh. Should he attempt to walk he would fall; he cannot stand erect without support; he tires of holding up his head. See how his fingers tremble. See how his hand shakes as he raises it. See how his whole body quakes and sways as he employs his muscles to support it. He feels that his strength has forsaken him, and he wonders if it will ever return.

He is conscious, too, of mental weakness. He says his memory is impaired; that he possesses no power to think; that his will is as weak as his arm; that trifles light as air agitate him, by fear, by pleasure, by expectation. He experiences a novel mental state due to the condition of his brain and of its blood-supply.

His cheek is pallid, his whole surface is white, his extremities are cool and clammy. The whites of his eyes have a bluish cast, the vermilion has faded from the borders of his lips, his tongue and all his visible mucous membranes are pale. His pulse is soft, quick, and compressible; the least agitation, the least movement, sends it up and makes him pant, and he has a bellows murmur at his heart. He has lost much of his blood.

All his functions are imperfectly and sluggishly performed—all but that one of his brain which has been called the twin sister of death, and which is so ever welcome to the sick and well,—sleep. Of this he requires and receives two or three times as much as formerly. But, gentlemen, this patient, this wreck of his former self, is no longer sick. That evil power, disease, has abandoned him. What is his condition, then? The ulcers of his ileum have undergone or are undergoing cicatrization. His softened and enlarged mesenteric glands and spleen are undergoing contraction and repair. These are the special lesions of the fever he has had, but these do not cause his present debility. His other lesions, those common to all fevers which are severe enough and protracted enough to produce them, do. They are these: His brain is oedematous. His blood, still overloaded with the products of destructive assimilation, is thin and watery; its corpuscles are still imperfectly formed and its plasma is still stained with their hæmatin. His heart is pale, flabby, and if thrown upon a table would be formless. It is still granular. His muscular system is atrophied and softened by the same granular fatty degeneration. His spleen, his pancreas, his liver, his salivary, lymphatic, and digestive glands, are still in an abnormal condition. All these organs begin from to-day—the day of convalescence—to undergo a reconstruction, a restoration to their normal condition under the influence



of nutrition, a metabolism, growing more normal day by day. And about the same time—namely, four weeks—which was required by that abnormal metabolism which we call fever to degenerate these structures will be necessary to restore them to their former perfection; then our patient will be in possession not alone of health, which he now has, but also of his former or even greater vigor.

It is the existence in this convalescent of these deteriorated organs which gives us the indications for his treatment. These concern his regimen, and are hygienic and dietetic. They have been frequently related and explained to you. It is by reason of the existence of these degenerations that mental or physical excitement of this weak heart, the satisfaction of an enormous appetite, and the gratification of the sundry and diverse vagaries and desires manifested by convalescents would be as injudicious as it would be to allow this man to crawl—for he could not walk—a mile.

The sequel which this convalescent presents is *ecthyma*,—not *eczema*,—*ecthyma cachecticum*. It consists in this case of probably forty small boils,—but they are not properly boils, because they have no “cores,” and because they have their seat in the uppermost layer of the derma. They are, as you see, isolated, have an inflamed and vivid areola and a hard base. They are in this case a result of the ravages of general—*i.e.*, constitutional—disease, their direct cause being tissue debility, minute tissue sloughs dependent upon a supply of perverted blood,—the blood of a convalescent from typhoid fever. They will form crusts under which there will be, for a few days, suppuration, then cicatrization, after which the crusts will fall, leaving temporary discolorations but no pits. They require no special treatment, and their limited number in this case will not delay the patient in his restoration to vigor. A few of the larger ones which are painful I transfix with this exploring needle, evacuating a drop of pus.

# REVIEW OF MEDICINE.

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## THERAPEUTICS.

IN CHARGE OF ALEXANDER D. BLACKADER, B.A., M.D.,  
Professor of Therapeutics, McGill University, Montreal, Canada.

**Another Form of Boracic Acid.**—Dr. Jaenicke (*Therapeutische Monatshefte* for September, 1891) gives the result of some interesting experiments with boracic acid in different forms. This writer found that, while most micro-organisms flourished in this so-called antiseptic, there was a certain limiting power which the drug exhibited. It seemed to have the power of retarding the development of their toxic properties, but was not powerful enough to check them altogether. As the powder is very insoluble, when dusted into or around a wound, it would very likely act as an irritant, and fail to act as an antiseptic.

Dr. Jaenicke, therefore, tried to find a boric-acid derivative which would be more soluble. For this purpose he united equal parts of boracic acid and borax at the boiling temperature. This saturated solution does not immediately precipitate crystals on cooling, and may therefore be kept for use in this condition (a seventy-per-cent. solution). When the crystals do form they will dissolve at the ordinary temperature to make a sixteen-per-cent. solution, or at the temperature of the body to make a thirty-per-cent. solution. This new preparation of boracic acid in solution is four times as strong as the old, and therefore that much the more valuable. The author has found it especially useful in suppurative affections of the ear, where he employs a sixteen-per-cent. solution of the crystals.

**Aniline Dyes as Antiseptics.**—In the *Quarterly Therapeutic Review* for July, 1891, many writers are quoted in support of the virtues of methyl violet as an antiseptic.

Dr. J. Silling, professor in the University of Strasburg, has used it in hundreds of cases, as a solution of one in one thousand, without any symptoms of irritation.

Graefe found that: 1. Methyl violet is about three times as strong as bichloride of mercury in its action on the anthrax bacillus, and just as effective as the latter drug in its action on the staphylococcus pyogenes aureus. 2. It is a perfectly non-poisonous substance. 3. Consequently, the pure drug may be used as such without danger. 4. It does not coagulate egg-albumen. 5. It possesses an extraordinary power of diffusion, not only acting



on the surface, but also penetrating in a mysterious way deep into the tissues. By reason of this latter virtue it is especially valuable in blepharitis, conjunctivitis, keratitis, parenchymatosa, etc. At the same time it must be remembered that it produces a deep stain very objectionable to the patient.

Surgeons on the continent find this drug useful in all cases where suppuration is to be prevented. Dr. Voigt has dusted the pure drug, in powder form, over carbuncles, whitlow, and similar acute inflammations, with most happy results. The pain and the suppuration were stopped simultaneously.

All authorities unite in establishing the absolute immunity from danger of any toxic symptoms arising from the use of this drug either as (1) a pure powder, undiluted, (2) in pencil form, (3) ointments, or (4) solutions. —*Lancet*, April 18, 1891.

**Butyl-Chloral.**—It is claimed in the *Wiener Klinische Wochenschrift* that butyl-chloral has been proved to have an especial action on the facial or trigeminal nerve. Given internally in doses of from one to three grains, it has a marked effect in relieving painful neuralgias of this nerve.

Professor Liebreich, of Berlin, prescribes it as follows:

R Butyl-chloral, gr. xl. to lxxv;  
 Alcohol, rect., fʒiiss;  
 Glycerini, fʒv;  
 Aquæ dest., q.s. ad., fʒiv.

Sig.—From two to four teaspoonfuls p. r. n.

**The Action of Chloral Hydrate on the Kidneys.**—Dr. Cavazzini<sup>1</sup> has recently made researches for the purpose of demonstrating the results of chloral upon the structure of the renal organs, as a result of which he claims that abdominal injections of this hypnotic cause a marked irritation of the secreting cells of the kidneys. Even after one injection there is a visible degeneration of the epithelia of the convoluted tubules, while a prolonged administration of the drug causes a marked degeneration of the cells of all renal tubules with the exception of the straight tubes. Continued administration produces all the symptoms of acute parenchymatous nephritis. The severity of these symptoms is dependent upon two factors (as is the case with all powerful remedies),—viz., the inherent susceptibility of the individual to the medicament, and the length of time the drug is taken. Cavazzini shows that to these factors a third might be added,—that the extent of organic change is also dependent upon the mode of administration,—i.e., whether taken directly into the stomach or injected hypodermically into the peritoneal cavity. By the former method the symptoms are less severe, the pathological changes less marked, and the manifestations of the same considerably delayed. A curious clinical fact which has been recorded as a result of these experiments is the entire

<sup>1</sup> Deutsche Medicinische Zeitung, September 7, 1891.

absence of albuminuria in all cases which showed these morbid processes post-mortem. Hence great care should be exercised in the administration of chloral to cases where there is a known history of renal complication.

**Alkalies in Universal Pruritus.**—Dr. G. Lange<sup>1</sup> speaks favorably of the use of alkalies, such as sodium carbonate in combination with lithium carbonate, in the treatment of pruritus, having used these remedies in four cases of universal pruritus with most gratifying results. In testing the urine of two other patients, Dr. Lange found an abundant precipitate of uric acid and urates.

## MEDICINE.

IN CHARGE OF JUDSON DALAND, M.D.,

Instructor in Clinical Medicine and Lecturer on Physical Diagnosis and Symptomatology in University Hospital, and Assistant Visiting Physician to the University Hospital.

**Diet of Typhoid Fever.**—In the *Medical and Surgical Reporter* (December 5, 1891, p. 889) Dr. Lehlbach emphasizes the fact that typhoid fever is a wasting disease, and calls attention to the researches of Professor Ernst Kohlschütter<sup>2</sup> who found that a curve representing the waste of tissues in typhoid fever always followed a uniform course, the amount of waste being in direct proportion to the height of the fever. Have we yet found a food which will compensate for the loss? is the question he raises. Only a small part of albuminous foods can be assimilated by a fever patient. A large detritus is left, therefore, which must greatly irritate the typhoid ulcers if allowed to pass over them. From observations that Lehlbach has made among numerous typhoid stools and at autopsies on several cases, he is convinced that very little of the casein of the milk is really digested, and the other constituents—the milk serum, with its salts, its sugar, and its cream—“form the essential elements of nutritive value in these conditions.” He believes, therefore, that milk is not a perfect food in these cases, and its use should be restricted.

He advises the addition of carbohydrates to the dietary, such as boiled rice, either with or without milk. “The food thus converted into caloric saves so much of the living tissue from being burnt up.” The dryness of the mouth and tongue so often present in this disease is less apt to annoy the patient under such a diet than with milk alone. In addition he advises giving a small amount of one of the malt extracts to promote assimilation. His results have been very satisfactory.

**Treatment of Pneumonia.**—In the *Edinburgh Medical Journal* for November, 1891, Dr. George W. Balfour writes,—

1. There is no true specific for the cure of pneumonia.

<sup>1</sup> Hospitals Tidende, November 21, 1891.

<sup>2</sup> Volkmann's Sammlung Klin. Vortr., No. 203, 1887, Schmidt's Jahrbücher.



2. That a favorable ratio of recoveries to cases does not indicate any specially curative virtues in the remedy employed, but merely a concatenation of favorable conditions in the cases treated, and this may be either accidental or the result of careful selection.

3. That the remedy which most deserves our attention is one capable of relieving the most distressing symptoms *tuto, cito, et jucunde*.

This observer thinks that a purge to clear "a dirty tongue" in the early stage of pneumonia is more harmful as a depressant to the heart's action than beneficial to the digestive tract.

There are two conditions to be guarded against: 1st, excessive consolidation of the lung-substance, and, 2d, excessive temperature. The latter is especially formidable. When the temperature is not high, consolidation offers no great impediment to the heart's action and can be readily handled.

After trying many ways of treatment he concludes that the sleeplessness, pain, and cough of pneumonia are best met by digitalis and chloral. He gives digitalis as an infusion together with Liebreich's chloral dissolved in it, the dose for an adult being twenty grains of chloral in half an ounce of infusion every four hours. After the first, second, or third dose the chloral could be reduced one-half, continued until the temperature became normal, and then replaced by a tonic. Locally, a jacket-poultice or cotton wool proves very useful. The diet should be carefully arranged. Under this treatment the crisis is well marked, the heart's action carefully nursed, and the patient made thoroughly comfortable.

**Relapse or Recrudescence in Scarlet Fever.**—A true relapse or recrudescence is comparatively rare, says Mr. George P. Boddie, in the *Edinburgh Medical Journal* for October, 1891, p. 338. He reports two interesting cases. In one case the relapse was more severe than the initial attack, and in the second much milder and shorter.

Some English authors state that relapses are seldom seen. Goodhart, however, says, "Relapses are not very rare." American medical literature contains many examples, also the German and French.

**Amœbic Dysentery.**—Councilman and Lafleur's most exhaustive and valuable researches regarding amœbic dysentery, published in the *Johns Hopkins Hospital Reports*, Nos. 7, 8, and 9, will always require consultation in all future work in this new field of diagnosis. The authors base their remarks and conclusions upon fourteen cases. One was of tropical and one of doubtful origin; the remaining twelve were endemic. All were studied with unusual minuteness and care, and in eight cases terminating fatally, autopsies were secured.

The clinical classification into, (1) dysentery of moderate intensity, (2) grave or gangrenous dysentery, (3) chronic dysentery, is one that is sure to meet with approval. These cases showed that the onset may be abrupt or gradual; that the course of the abdominal symptoms were independent of

the mode of onset, and that intermission in the diarrhœa occurred without apparent cause; that the duration was variable, with a distinct tendency to chronicity, though in general it was shorter in those having an abrupt and severe onset, and that recovery or death occurred at any period in the course of the disease.

The inactive amœbæ were usually round or oblong, and more refractive than other cells found in the fæces, vacuolated, and measuring from two to five times the diameter of a red blood-corpuscle. At times they contained red blood-corpuscles, blood-pigment, pus, bacilli, and micrococci.

The active amœbæ had the same characteristics, but, in addition, were in rapid motion, at times throwing out blunt pseudopodia; others moved so slowly that care was necessary to separate them from the inactive variety. They were most numerous in the small gelatinous masses found in the fæces. At times no single portion of the fæces was free from them, and occasionally but a single amœba was found after protracted search. Generally their number was proportionate to the severity of the lesion and the acuteness of the case.

The amœba dysenteriae was found in eleven cases. In one of the fifteen they were found in the fæces after death; in a second the fæces were not examined, but after death the amœbæ were found in the ulcers and hepatic abscess, and in a third they were observed in the fæces at the autopsy. In two cases the parasite was first detected in the sputum. In one case they were found in sputum and fæces, and in another in the fæces and hepatic abscess.

From the evidence presented by the authors it is clear that (1) amœbic dysentery is a distinct disease, and (2) that the amœba dysenteriae is the cause. The six large plates appended add much to the value of their contribution, which is destined to become classic.

**New Treatment of Diphtheria.**—Professor Seibert<sup>1</sup> proposes a system for the treatment of this dreaded disease which is, from a theoretical point of view, thoroughly rational, and which has the forcible argument in its favor of a mortality of but six per cent. Believing, as he does, that the pharyngeal manifestations of diphtheria begin as a local process owing their origin to the penetration of the Klebs-Löffler bacillus; that therefore the pseudo-membrane is not the disease, but rather a manifestation of the disease, and a powerful indication of the diphtheritic inflammation *below it*,—upon this theory rest the basis and *rationale* of the treatment advocated. He has proved that the mere removal of the pseudo-membrane is productive of but little good, as the bacilli therein contained are of no further consequence. He also states that even after the removal of the membrane the local application of strong antiseptics to the denuded parts is of but minimum value, as they merely cauterize and infest the surrounding tissues,

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<sup>1</sup> Archives of Pediatrics, June, 1891.



rubbing the bacilli into deeper parts, and therefore they are without germicidal effect.

Reasoning from this stand-point, Seibert has devised instruments for the purpose of bringing solutions into *direct* contact with the bacilli which are found embedded in the lower strata of the mucosa. The germicidal medium which he advocates is the freshly-prepared *chlorine-water* of the United States Pharmacopœia. His special syringe, having five needle-points instead of one, is pressed firmly in to its full length and the solution injected into the part. The direct contact of the specific (chlorine) with the living germs causes their immediate destruction and a consequent cessation of the pathological process. The further treatment consists of a gargle (following the injection) of one or two grammes of the tincture of iodine and ten drops of concentrated carbolic acid in four ounces of water, a teaspoonful being alternately gargled and swallowed every fifteen minutes for eighteen hours. An ointment consisting of zinc and mercury is rubbed into the swollen glands every two or three hours, and finally an ice-bag is applied over the inflamed parts of the neck. The membranes remain in the throat a few days, entirely harmless, as the mouth-wash prevents the spreading of the process.

Of thirty-five cases treated by this method Seibert claims to have lost but two, and in *none* did diphtheritic paralysis follow the disease. The author sums up his article with the following pertinent observation: "These cases are sufficient to show that the chlorine-water injections are efficient, local, and germicidal enough to check the growth of any diphtheria germs with which they come in contact." Almost the entire Pharmacopœia has been exhausted in futile attempts to discover a specific for this fell disease; hence any method or remedy that is advocated by one who deserves the confidence of the profession is worthy of careful study and trial.

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## NEUROLOGY.

IN CHARGE OF B. SACHS, M.D.,

Professor of Mental and Nervous Diseases in the New York Polyclinic; Neurologist to the Montefiore Home for Chronic Invalids; Consulting Neurologist to the Italian Home of New York City.

Professor F. Jolly: Ueber trophische Störungen bei Rückemarks-  
erkrankungen.—(Reprinted from the *Charité Annalen*, vol. xvi.)

Under the heading of trophic disturbances in diseases of the spinal cord, Jolly describes a case of Morvan's disease (so called) and a case of *tabes dorsalis* with facial atrophy.

The case of Morvan's disease is that of a man aged twenty-six years, who six years previously suffered from a felon of the index-finger of the right hand; three years after, this patient had a felon of the fourth finger of same hand, and a year later a felon of the little finger; rheumatic pain and sensation of cold in the entire

right arm were further symptoms of the case, also trophic disturbances in various joints and slight paresis of right hand. Slight diminution of faradic and galvanic excitability. Sensation tolerably good, except that pain and temperature senses were deficient in the right hand; these changes were present but less marked in the right forearm and upper arm, in the right half of face, of thorax, and of the right half of the back as far down as the eleventh dorsal vertebra. Visual fields were normal. Under treatment (electricity, massage, and baths) the condition improved; pains were diminished, but the analgesia and thermo-anæsthesia persisted.

Jolly declares this to be a case of Morvan's disease, at the same time insisting on the strong analogy with the symptoms of syringomyelia. Charcot has attempted to define the points of differential diagnosis between these two diseases, but Jolly is disposed (and we think properly enough) to agree with Bernhardt in thinking the two diseases identical, particularly since Joffroy and Achard have published the results of a post-mortem examination of a case of Morvan's disease in which they found a true syringomyelia. Jolly believes that Morvan's disease may represent a special form of gliomatous degeneration of the spinal cord with or without cavity formation, and complicated possibly by inflammation of one or more peripheral nerves. This is all the more probable in cases such as the one here reported in which the neuritis may have been started by the felons, and the ascending neuritis may have involved a congenitally maldeveloped cord. But to think, as Jolly does, a congenital maldevelopment of the spinal cord probable, because the patient had webbed fingers, seems to us a trifle risky.

The second patient to whom Jolly refers is a woman, aged fifty-one years, whose face was said to have become atrophied since an attack of influenza one and a half years previously. The woman presented all the symptoms of facial *hemiatrophy* except that *both* eyes seem to have receded. Upon examination, the patient was found to have all the important symptoms of *tabes dorsalis*, including laryngeal crisis.

This association of facial *hemiatrophy* with *tabes dorsalis* is a very unusual, if not unique, one. Facial *hemiatrophy* has been proved (by the recent post-mortem examination in a case of Mendel, and also by a case of the reviewer, in which the motor branch of the fifth nerve was involved) to be a disease of the trigeminal nerve, and other affections of the fifth nerve have been shown by Oppenheim to occur in cases of *tabes*.

In Jolly's opinion, the attack of influenza did not cause either the *tabes* or the facial *hemiatrophy*, but it helped to hasten the downward progress of the disease.

Dr. S. Freud and Dr. Oscar Rie: *Klinische Studie über die halbseitige Cerebrallähmung der Kinder*.—(Vienna, 1891.)

It seems proper in these pages to call the attention of the reader to the above monograph on the cerebral hemiplegia of children. These clinical studies are based upon a very careful study of thirty-five cases of cerebral palsies in children. Although the number is comparatively small, the



authors have made the most of the material at hand, and have recorded their cases with almost painful accuracy. The clinical symptoms of these diseases are, on the whole, so clear that the frequent repetition of the most minute details is unnecessary, and often tiresome.

The title of the monograph must be a surprise, almost a shock, to those who, during the past few years, have studied these cerebral palsies of childhood. All recent authors (including Lovett, Osler, Sachs-Peterson, Gibot-teau, and others) have reached the conclusion that infantile cerebral hemiplegia is not a distinct clinical entity, and that it is closely related to, and identical with, cerebral diplegia and cerebral paraplegia in all but the *form* of the palsy. The authors, evidently feeling the gravity of this error, apologize for it in the Introduction; but, in spite of their apology, such a cardinal defect is a serious blemish. Taking this rather narrow view of the subject, they have been led to make a subdivision of cases of infantile cerebral hemiplegia which we do not consider tenable. They distinguish the cases according to the manner of onset and the relative development of paralysis and post-hemiplegic movements. The first group is to contain cases with very acute onset (convulsions, loss of consciousness, vomiting, fever), in which paralysis is almost absolute, associated later on with extreme contractures and increased reflexes, but *no* post-hemiplegic movements, except, possibly, after the disappearance of contractures. They call these, cases of *spastic paresis*, pure and simple. A second group contains cases with slow onset, slight paresis, and very marked post-hemiplegic movements. These are cases of "choreic paresis." The cases of the second group are similar to the terminal stages of the first group. They also establish a group of mixed cases,—spastic choreic cases. If the authors had seen a very large number of cerebral palsies, they would have found this subdivision useless and wrong. In the reviewer's record of two hundred and twenty-five cases, there are many hemiplegias with acute onset and with post-hemiplegic movements; and, on the other hand, cases with slow onset, contractures, and no disturbances of motion.

But what will the authors say of the many cases of congenital hemiplegia and diplegia, and of acute diplegias in which post-paralytic disturbances of motion have been developed, and in which there cannot be said to be any definite relation between the "mode of onset" and the development of these post-paralytic movements?

This attempt at minute subdivision does little good, for it does not even help us to determine the pathology of a given case, and this is, after all, from the diagnostic and therapeutic point of view, by far the more important question. As the authors make this subdivision the original feature of the book, we have felt it our duty to criticise this special point.

For the rest, although there is often reason to differ from the authors' conclusions, the reviewer has nothing but praise. The historical introduction is written in a most careful and judicious manner. Among other things, it is interesting to learn (in a later chapter) that Vizioli, as long back as

1880, claimed the close relationship between the infantile cerebral and infantile spinal palsies, and thus anticipated Strümpell's theory of poliomyelitis. To this theory the authors are opposed, as almost every recent writer has been. They believe in the vascular origin of these palsies. These cerebral palsies of children, like the cerebral palsies of the adult, are most frequently due to hemorrhage, thrombosis, and embolism. Of these causes, again, the authors think embolism is the most frequent. The secondary changes following these initial lesions are discussed very fully, and an entire section is given up to a very interesting account of the relation of epilepsy to these palsies. The chapter on treatment is much fuller than we are accustomed to find it in German monographs, and the authors have a good word to say in favor of early surgical interference.

In spite of certain defects, every student of the cerebral palsies of childhood will find Freud and Rie's monograph an excellent starting-point for his studies. The monograph contains, moreover, the most complete bibliography of the subject yet published.

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## PEDIATRICS.

IN CHARGE OF F. FORCHHEIMER, M.D.,

Professor of Physiology and Clinical Diseases of Children, Medical College of Ohio, etc.

THE last number of the *Archiv für Kinderheilkunde* (Heft iv., v., vi., Bd. xiii.) is of special interest in a great many respects. It gives us a description of the most recently-built children's hospital, and, in addition, brings us contributions from the various members of the staff. The erection of a new children's hospital, in a civilized land, is always a noteworthy event, and it is interesting to observe how the natural difficulties that are connected with a perfect institution are overcome. In addition to these inherent problems there are always those that are proposed by the contemporaneous medical views, so that, in one way, the history of hospitals would be the history of medicine. In our own hospitals one would, possibly, not be struck with the aptness of this statement so much as in looking at the older hospitals on the other side of the ocean. No one could have gone through the wards of the old Hôtel Dieu, for instance, without feeling that he was breathing the air of another century, characterized by its bloodletting, its actual cauteries, and its indiscrimination of disease. If ever the Kaiser and Kaiserin-Friedrich-Kinderkrankenhaus is discovered by the archæologists of succeeding generations, they will have to characterize it as having been built for asepsis and the prevention of contagion. The buildings consist of the principal ones, three in number, for administrative purposes, including the residence of the director and the medical and surgical wards, and the four pavilions for infective diseases, one each for measles,



scarlatina, diphtheria, and whooping-cough. In addition to these there are : a building for an out-door clinic, where the patients are received and the suspicious cases held until a diagnosis can be made, kitchens, laundries, etc., and, finally, the dead-house.

When completed, the hospital will be able to receive from two hundred and fifty to three hundred patients, and the estimated cost of erection and furnishing is 1,360,000 marks, each bed costing 3866 marks (about \$966).

Baginsky begins by giving general and special directions regarding the fulfilment of requisites for a children's hospital, including diet lists, based upon scientific principles, and this is followed by a description of the hospital by the architects, including a drawing of a most wonderful window and a bedstead for children such as is found in most well-regulated families with us, but called "Modell Baginsky-Herfordt." Then follows a description of the division of labor (Baginsky), from which we find that the most sensible arrangement that can possibly be found has been made : the medical director is the physician-in-chief ; the whole service is divided into a surgical and a medical one, the medical director not being hampered by boards of trustees, male or female, but responsible to a committee, evidently, whose president is Rudolf Virchow. In this respect, as in a great many others, much could be learned by us, but it is outside the province of this review to refer to hospital trustees. The assistants live in the pavilion to which they are assigned, and, in order to prevent contagion, come together only in the laboratory ; the nurses are sisters of the Victoria House.

Following this there comes a short paper on the ventilation of the house (Dirnberger), in which the conclusion is arrived at that the arrangements are "most excellent,"—a conclusion that may, possibly, have to be modified when the hospital is completed, as the system of ventilation is, unfortunately, one that has never proved satisfactory heretofore in this country. In the preceding all sorts of precautions are taken in order to prevent the possibility of carrying contagion from one patient to another : the taking of baths repeatedly, washing the face, hands, beard, and hair, the wearing of rubber coats and boots, etc. What a monster the general practitioner becomes if these precautions, correct in theory, are necessary in practice ! Just imagine a poor practitioner with a case each of measles, whooping-cough, diphtheria, and scarlatina. He must take at least four baths, disinfect himself four times,—face, hands, beard, and hair,—wear four gum suits, and then attend to the rest of his practice. Men in active, large practice will testify that this is not necessary, and a large hospital experience will be convincing that certain diseases (diphtheria, scarlatina, and whooping-cough) can be prevented from spreading in a hospital by much less expense of time and material, while measles are notoriously uncontrollable. The first case of measles that is brought into this hospital ought to be watched with renewed interest ; if a house epidemic is prevented we will be the first to congratulate Baginsky upon his success !

The special part of the journal opens with an article (Baginsky) upon

croupous pneumonia, its temperature-curves and antipyretic therapy. From the 1st of September, 1890, to August 1, 1891, one hundred and forty-seven cases were treated, and of these thirty had genuine croupous pneumonia. This, certainly is a remarkable condition of affairs, but that it is true is proven by the known ability and conscientiousness of the author, as well as by the appended condensed histories and temperature-curves. Seventeen cases terminated by crisis, and not one of all the cases observed died. Baginsky recommends the wet pack,—three, each one of ten minutes' duration,—repeated twice or three times a day, from 60° to 70° F. (13° to 18° R.). In addition, stimulants are given,—sherry or port. A most excellent *résumé* of his views concerning antipyretics is given, in which he takes the ground that sometimes antipyretics are necessary in the form of medicine, but always antithermics, principally on account of their beneficial effects upon the nervous system. Nine cases of typhoid fever were treated, one of which was complicated by noma, and all treated upon the principles laid down before, without any mortality. Next, reference is made to five cases of pseudo-leucæmic conditions and the appearance of peculiar coloring matters in the urine of two cases. Lastly comes tuberculin: from a clinical stand-point (Baginsky) and its relation to the metabolism in children (Segarra). No German publication is complete without tuberculin, and as it is necessary to be complete in every respect, we must take our dose of tuberculin from this otherwise most excellent number.

The surgical division is under the direction of Professor Dr. Th. Gluck, who begins by describing his part of the hospital with prolixity, and goes over the details of aseptic and antiseptic surgery with patience and endurance. Things that every surgeon must know as he would his alphabet are entered into with the utmost detail: the cleansing of hands, the preparation of catgut, aseptic instruments, etc. One would not suppose that the victory for asepsis had been fought, judging by the reiterations one sees here, as elsewhere. Next follows, by the same author, an excellent description of a case of congenital sacro-coccygeal sarcoma with metastasis, preceded, as we would expect, by a complete history of the subject. After this we again come to tuberculin,—twenty pages of tuberculin in surgery applied to ten cases of tubercular troubles. Thirty-three cases were treated upon surgical principles,—*i.e.*, without tuberculin; of which fifteen were cured, twelve still have treatment, five improved, and one died, certainly good enough results to be perfectly satisfactory.

In the treatment of erysipelas the abortive method is used, incisions and iodoform, with uniformly perfect results. It seems strange that this method has not taken root more firmly in this country, as all observers seem to agree that any erysipelas, when upon the surface, can be limited with absolute certainty. Of great interest is the treatment of noma by means of the galvano-caustic iron,—the patient, referred to before as having had typhoid fever, recovered completely. The out-door material consisted of two thousand cases from August 1, 1890, to August 1, 1891.



We now come to the section in which the physician and the surgeon have worked together (Baginsky and Gluck). In this, eight cases of serous pleurisy are reported, in five of which absorption took place, the treatment being tonics, warm, moist applications, massage of the thorax, and tincture of iodine externally. In the three cases aspiration was done, all of which recovered after being aspirated but once. Especial attention is called to cases of pleurisy with intermittent type of temperature. Baginsky does not believe them due to malaria, and, contrary to his usual painstaking methods, does not mention an examination of the blood for the plasmodium malarie. Three cases of empyema were treated by resection of a rib and tamponed with iodoform gauze, two of which recovered, the third dying of a tubercular meningitis, on the twenty-fifth day after the operation.

In the next article, a contribution to the etiology of diphtheria (Baginsky), we come to the most important chapter of the number. The Löffler bacillus is accepted as the criterion for the character of the sore throat, and in every case the method of D'Espine and Marignac was used to determine its presence.

In ninety-three cases of membranous sore throat the bacillus was found sixty-eight times, with a mortality of forty per cent., and it will be well to translate the conclusions arrived at by the author.

1. "There are two forms of disease which produce, clinically, the same changes upon the tonsils and the mucous membrane of the pharynx. The characteristic change in these cases is the appearance of dirty grayish-white or greenish pseudo-membranous infiltrations in the diseased tissues. As both forms are accompanied, in the same way, by fever, prostration, and swelling of the submaxillary lymphatic glands, a clinical separation becomes impossible. And yet these two forms differ *toto cælo*: the one produced by the bacillus of diphtheria is very dangerous, producing a mortality of nearly fifty per cent.; the other caused by staphylococcus and streptococcus (at least these micro-organisms are constantly found, so that it is probable that they are the cause) is harmless and runs its course without endangering life.

2. "These two forms can be differentiated by bacteriological cultures only, but then with absolute certainty. This test can be made with great facility by cultivating small pieces of membrane upon Löffler's serum, after having washed them in a two-per-cent. solution of boric acid. This method does not take up as much time as an examination for tubercle bacillus; it leads to positive conclusions without the use of dyes, with practice even by macroscopic inspection of the cultures."

The conclusion that there are at least two kinds of diphtheritic membranes is one that every thinking clinician must have arrived at; the fact that these forms cannot be separated upon purely clinical evidence is also an old one, but the application to our every-day work is one whose importance cannot be overestimated. The apparent ease with which the differential diagnosis can now be established will make the method very much

more valuable. It is hardly necessary to add how much practical importance must be attached to any method which implies early isolation, proper treatment,—possibly, successful treatment,—and last, but not least, a scientific prognosis.

Next comes the treatment of diphtheritic croup by tracheotomy and intubation. The differential diagnosis by means of the above-mentioned method has, unfortunately, not been established, so that all the sixty-eight cases of tracheotomy are reckoned under diphtheritic croup; 33.8 per cent. recovered. It will not be difficult, hereafter, to make this differential diagnosis, one of the greatest clinical importance, and it will be interesting to observe the tidal wave that will sweep the non-believers into the right position of believing in the existence of a membranous but non-diphtheritic croup. The intubations (Aronson) are followed by the same results that most German observers have obtained,—fourteen cases with one cured; fortunately, we do not hear anything concerning decubitus, as in Schwalbe's cases, but very much trouble in feeding, and the conclusion that intubation is especially valuable in the stenoses following diphtheria, especially in difficult décanulement.

The study of post-diphtheritic paralyses (thirty out of one hundred and forty-four) has led Baginsky to the following conclusions:

1. The more intense the diphtheritic process in the pharynx the earlier does paralysis follow. We usually have paralysis of the soft palate; it appears consecutively with albuminuria or well-developed nephritis, affects the heart often and early, and the children die with symptoms of heart-weakness.

2. Paralysis coming more slowly or later is associated with non-gangrenous or non-septic processes; generalization of paralysis, but especially localization to the diaphragm, is dangerous. Paralysis of the diaphragm is more common than is usually accepted. It is characterized by almost complete aphonia, cough, with difficult expectoration of copious, foamy, and viscid mucus, dyspnoea with thoracic respiration. The affection is usually, though not always, fatal; death occurs with asphyxia, bronchitis or bronchopneumonia, or suddenly with complete cessation of respiration.

3. The manifestations on the part of the heart are manifold. They vary from diminution in tension in the arteries to arrhythmia with symptoms of stasis. Auscultation shows disappearance of the first sound, indistinction of both sounds, duplication of the first sound. At the same time there is a rapid, sudden, and very great swelling of the liver, ominously prognostic. Cheyne-Stokes respiration may occur, but recovery may take place after the appearance of all of these symptoms.

The best results were obtained by subcutaneous injections of sulphate of strychnine, 0.003 to 0.004 *pro die*, in three injections, and of camphor. Arnheim comes to the conclusion that diphtheritic paralysis has as its pathological basis a polyneuritis; in Virchow's words, neuritis parenchymatosa et interstitialis proliferans.

The last paper is devoted to an examination of lower forms of life in



the pneumonia consecutive upon diphtheria (Strelitz). The following were found:

1. The diplococcus (Fränkel Weichselbaum).
2. Staphylococcus pyogenes aureus et albus.
3. Streptococcus pyogenes.
4. Friedländer's bacillus.
5. Löffler's bacillus.

Fränkel's diplococcus was found most frequently, and is supposed to be the most common, although not the exclusive, cause of the pneumonia produced.

In closing, we can say that this report is to be looked upon as a model upon which many hospital reports should be based. Combining, as it does, the work of many, the end to be attained is always clearly before the eyes of the reader, everything moves with the right spirit, and the contributions made are very valuable. A thorough reading of this number by all physicians would be invaluable, especially in connection with diphtheria. Our hasty review will, we hope, bring it to the notice of many who are not especially interested in pediatric literature.

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## SURGERY.

IN CHARGE OF B. FARQUHAR CURTIS, M.D.,

Surgeon to St. Luke's Hospital and to the New York Cancer Hospital.

**Malignant Tumors of the Breast.**—Poulsen (*Archiv f. Klin. Chirurgie*, xlii. 593) gives an analysis of two hundred and eighty cases of carcinoma and thirty-three cases of sarcoma of the breast, which is particularly valuable because the history of so many of the patients was completed after operation. The cases of carcinoma are studied first. As to heredity, etiology, symptoms, and course, Poulsen's figures agree with those of Oldekop, Von Winiwarter, and Gross. One point of considerable interest is the comparison he makes of the life-history of the various forms, showing that there may be the greatest difference in the rapidity of growth and in the rate of infection of the glands in tumors of the same histological structure: thus, scirrhus may grow rapidly, medullary carcinoma slowly (taking three years to reach the size of a goose-egg), although, as a rule, the former increases less rapidly than the latter. Fifty cases of carcinoma remained well for three years after operation, being twenty-two per cent. of the whole, and of these five relapsed later and died, three died of metastatic tumors, and eight died from other causes. That eight cases died of local relapses or metastasis after this interval shows that three years is not quite long enough, although it hardly proves that it is necessary to take Paget's limit of ten years before admitting a radical cure. One of the relapses occurred nine years after the first operation, the disease returning as cancer *en cuirasse*;

but it seems to the reviewer as if this might fairly be considered a fresh outbreak of disease, and not a relapse. Of the thirty-four cases still alive at the time of the report, one had a local relapse, while the rest were healthy, but all are cases in which the glands were very slightly or not at all affected. In twenty-one of them the axilla was not even explored at the time of operation (no glands being felt), and in these the operation was performed thirteen years before in two cases, eleven and a half years in one, ten years in six, nine years in two, eight years in one, seven years in four, six and a half years in two, five years in two, and four years in one case. It seems scarcely possible that any one should suppose that these figures indicated that it is unnecessary to explore the axilla, but Poulsen is careful to state that it should be cleared, even if no glands can be felt, as this procedure does not add materially to the risk of the operation. He gives thirteen cases, moreover, which were treated without opening the axilla, because no glands were felt, in which death occurred with a tumor in the axilla in from one month to five years after operation.

It is well to note that in some of the successful cases the tumors had existed for seven years before operation, showing that even after such a long history the glands may be uninfected, and there may yet be a hope of cure. Poulsen estimates that, when the axillary glands are not involved, from thirty to forty per cent. (on a basis of ninety-seven cases) remain free for three years, but if the glands are involved, only from ten to thirteen per cent. (in one hundred and thirty-five cases) are healthy at that time. Of forty-three cases in which it was proved by microscopic examination that the glands were involved, only four were alive and well at the end of three years, and in all of these the glandular infection had been slight; the rest had died, six of metastasis without local relapse, three with axillary relapse, fifteen with local and axillary relapse, and the remainder with relapse locally and in the axilla and metastasis as well,—a melancholy chronicle, and one which should stimulate every one to operate upon these cases early, before the glands are involved.

Poulsen endorses Heidenhain's recommendation to extirpate the pectoralis major muscle if the breast is adherent to it, provided there is not much infection of the axillary glands, and hence a good chance of cure. But he points out that there are many cases in which infected portions of the muscle have been simply excised, without extirpating the entire muscle, and yet the patient has remained well, or has suffered only from recurrence in the skin; hence Heidenhain's theory that, if the muscle is involved at all, it is dangerous to leave any part of it, does not seem to be in accordance with the facts. His objection to the removal of the muscle is owing to a fear that its loss would impair the motions of the arm, but he does not appear to have had any experience with the operation, and it may be as well to note that in two cases in which the reviewer has tried extirpation of the pectoralis the functional result was very good.

Poulsen analyzes thirty-three cases of sarcoma, forming nine and three-



tenths per cent. of the tumors of the breast. One-half of these cases occurred in women between forty and fifty years of age, the rest being pretty evenly distributed over the various decennials, so that the average age was somewhat greater than that found by other observers. Thirteen cases were cysto-sarcoma, and in ten of these the duration before operation was five years, frequently with a history of rapid growth just before removal. Nine cases (all large tumors) were alive and well, one two years after the operation, the rest from five to fourteen years; one died of pneumonia, apparently without recurrence, ten years after removal of the tumor; and three died of metastasis two years, one year, and two months after operation. In four cases local relapses took place one month, six months, one year, and three years after operation, but two were successfully removed. Of eighteen cases of solid sarcomata, eleven were alive from four to sixteen years after operation, four of whom had had secondary operations. There was local relapse in four other cases, all of whom died within a year, and four died of metastasis in from one-half to three and a half years. Taking both kinds of growths, there was sixty-three per cent. cured,—seventy-five per cent. of the cystic and fifty-eight of the solid sarcomata. The axillary glands were involved in five cases; consequently, Poulsen advises that the axilla should be cleared as in carcinoma of the breast.

**Pathology of Hypertrophy of the Prostate.**—Casper (*Archiv f. Pathologie*, cxxvi. 139) attacks Guyon's theory, as published by his student Launois, that hypertrophy of the prostate is always associated with arterio-sclerosis and is a result of that disease. This theory holds that not only in the prostate but throughout the urinary apparatus there is a degeneration of the arterial coats, resulting in hypertrophy of the prostate and in hypertrophic changes in the bladder-walls as well, the latter changes being considered to be due to neoplastic growth, not to mere muscular hypertrophy rendered necessary by the mechanical resistance offered by the prostatic obstruction. Casper examined twenty-four cases of hypertrophied prostate and found arterio-sclerosis of the renal vessels in eight, in five of which the prostatic vessels were also involved. In two cases only was there simultaneous disease of the renal, prostatic, and vesical blood-vessels. On the other hand, in four cases of arterio-sclerosis of the kidney or bladder examined by him there was no prostatic hypertrophy. All of the twenty-four cases of enlarged prostate were from subjects over fifty years of age, a fact which gives additional weight to this evidence against the theory, for arterial disease is so common at that period of life that the few cases found can be more readily explained as mere coincidences than as indicating any causal relation between the two pathological conditions. Casper also very properly points out that the results of arterio-sclerosis as we know it elsewhere in the body are degeneration, not hypertrophy, and it is therefore improbable that it should produce hypertrophy in the prostate. The rest of the paper describes the various forms of prostatic hypertrophy, the myomatous, circumscribed and diffuse, and the rare glandular form.

## GENITO-URINARY SURGERY.

IN CHARGE OF WILLIAM K. OTIS, M.D.,  
New York.

**The Value of Urethroscopy.**—The paper of Dr. Samuel Alexander<sup>1</sup> on this subject gives evidence of much careful reading and good reasoning. Some reserve the use of the urethroscope for cases of chronic urethritis which have resisted treatment. Others use it in every case as soon as the acute symptoms have subsided. “On the one hand it is asserted that the information gained does not compensate for the irritation which, in most cases, is caused by the urethroscope. On the other hand it is claimed that urethroscopy is the only rational method of diagnosis and treatment in chronic urethritis.” In estimating its real value it is necessary to distinguish between its use in diagnosis and its use in treatment, in order to avoid confusion.

The author prefers a combination of Klotz’s urethroscope with the electric light and reflector designed by Dr. W. K. Otis to either Leiter’s instrument or the speculum of Dr. F. T. Brown. To manipulate it satisfactorily and develop ease in its use considerable practice is necessary. He claims, first, that a *thorough* diagnosis can be made by the urethroscope; that it gives positive information as to the surface of the mucous membrane of the urethra; that the extent of the inflammation and the portion involved are thus determined, in addition to the condition of the follicles and the amount of infiltration present in the walls of the urethra, etc., and, further, that, where proper care is employed in the *time* of using the instrument, the resulting irritation is very slight. It should never be used in the acute stage, and should be used with great caution in posterior urethritis or an epididymitis. When introduced it should always be a standing rule to explore the membranous portion, otherwise much valuable information may be overlooked.

He has found that this instrument is “of value *in regulating treatment* as well as in determining the character of morbid changes produced by urethritis.” The effect of any local application may be watched, and its strength increased or diminished accordingly.

**The Modern Treatment of Syphilis.**—Dr. Jonathan Hutchinson<sup>2</sup> thinks that, for the last quarter of a century, mercury has been steadily gaining the confidence of the profession as the one real remedy for syphilis. It should, of course, be given in the way least likely to disarrange the system, and therefore large dosage should be avoided. The “abortive method” is the favorite. In nine cases out of ten absolute suppression of

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<sup>1</sup> Journal of Cutaneous and Genito-Urinary Diseases, October, 1891, vol. ix. p. 376.

<sup>2</sup> The Practitioner, June, 1891.



the secondary stage is possible. This drug, if it is not a positive antidote, certainly exercises a restraining influence on the syphilitic virus. For ordinary cases he employs a pill containing one grain of hydrargyrum cum cretâ with sufficient opium to prevent diarrhœa or griping. This is given from three times a day up to one every two or three hours, according to the effect, the diet being carefully regulated. The patients who have an idiosyncrasy against this drug demand considerable ingenuity, on the part of their physician, in the selection of one of the various methods of administration. The iodides are very useful in gummata and in affections of the nervous system. The writer gives the three iodides of ammonium, potassium, and sodium together, combined with a small quantity of free ammonia, which he thinks should never be omitted.

Cases that have been free from symptoms for a long time, or without secondary symptoms, are not necessarily short-lived or subject to a recurrence of their trouble or the development of tertiary lesions. The writer mentions locomotor ataxia and general paralysis of the insane as allied disorders of this disease, but does not go any deeper into this branch of the subject. For inherited syphilis, inunctions are the most effective. A solution of bichloride, in small doses, is well borne by the infant patient, and is usually very effectual. It is not so apt to purge as the gray powder.

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## ORTHOPÆDICS.

IN CHARGE OF REGINALD H. SAYRE, M.D.,

Assistant Physician to the Chair of Orthopædic Surgery, Bellevue Hospital Medical College,  
New York.

**Torticollis.**—At the November meeting of the Orthopædic Section of the New York Academy of Medicine, Dr. Reginald H. Sayre presented a patient wearing an apparatus for retaining the head in position after operations for relief of torticollis. The apparatus itself had been shown to the society four years previous, but an account of it had never been published. A day or two before the operation a plaster-of-Paris corset was made for the patient, and immediately cut off by dividing it longitudinally down the front to permit its reapplication after operation on the torticollis. In the plaster-of-Paris corset was inserted, while being made, the lower part of the ordinary "jury-mast," attached to the top of which was a rod bent to touch the back of the head, and fastened to this a stout metal band roughened on both sides, which passed around both sides of the head.

After cutting the sterno-cleido-mastoid subcutaneously half an inch above the clavicular and sternal attachments and dressing the wound with a compress and bandage, the corset was applied and secured firmly with a few turns of a plaster-of-Paris bandage. The head was then covered with a tightly-fitting worsted foot-ball cap pulled well down over the forehead and

ears. A plaster-of-Paris bandage was passed around the head, the head put in such a position as fully to separate the ends of the sterno-cleido-mastoid muscle, the metal side-pieces fastened against the head something like a photographer's head-rest, and a plaster-of-Paris bandage put over all. The apparatus was cheap, easily procured, and efficient.

**Pott's Disease.**—At the October meeting of the same society, Dr. Royal Whitman showed a device for holding the shoulders back in cases of spinal caries situated in the upper dorsal region. Two cups of hard rubber fitted to the shape of the head of the humerus were connected by a stout steel bar passing in front of the chest. These cups were held against the shoulders by straps passing above and below the shoulder, and fastening to a plate resting against the scapula, which was fastened to the ordinary Taylor brace. The object of the addition was to restrict motion of the shoulders and to keep them from drooping forward, holding them as one would do with the thumbs against the scapulæ and the fingers against the front of the shoulders. The rod passing in front of the chest held the cups in position very well, whereas in the old devices of this kind, like the Banning spring, they are very apt to slip off the shoulders when the patient exercises. This same device can be applied to the jury-mast of a plaster-of-Paris jacket, and will be a useful addition in cases of upper dorsal caries.

**Lateral Curvature.**—At the last annual meeting of the American Orthopædic Association, Dr. E. H. Bradford showed a chair for straightening the ribs in lateral curvature. The patient sat upon the chair with the pelvis securely fastened. An iron belt passed around the thorax loosely, being fastened to firm uprights in the chair. From this thoracic girdle as a base of support, long screws pushed pads of proper shape against the projecting ribs near the spine, while other pads exerted counter-pressure in front against the shoulders and, if necessary, any projecting portions of the thorax. In arranging the pads, care must be taken that the line of pressure is directed against the ribs in a line away from the spine, and not towards it, or else the rotation of the vertebræ will be increased by the transmission of the force to them through the articular facets in an improper manner. This is one reason why so many of the apparatuses used to correct lateral curvature make the deformity worse instead of better, as they push the projection of the ribs towards the median line instead of away from it, the certainty of thus increasing the rotation of the vertebræ being overlooked.

In the first volume, first number, of the *Zeitschrift für Orthopædische Chirurgie*, A. Hoffa, of Wurtzburg, describes an apparatus quite similar to that of Bradford, but which differs from it in requiring the patient to stand. In both devices traction is made on the head by head-piece and pulley at the same time that lateral pressure is made against the ribs.

C. F. Stillman, in the *Medical Standard* for September, 1891, suggests, among other measures for the treatment of round shoulders, rowing exer-



cises while the head is suspended from above by a head-collar fastened to an elastic spring which makes constant upward and backward traction on the neck while the patient rows.

## OBSTETRICS AND GYNÆCOLOGY.

IN CHARGE OF J. M. KEATING, M.D.,

Formerly Consulting Physician for the Diseases of Women, St. Agnes's Hospital; Visiting Obstetrician to the Philadelphia Hospital (Blockley), and Lecturer on Diseases of Women and Children; Editor "Cyclopædia of the Diseases of Children," etc.

"Dangers of leaving the Products of Inflammation in the Female Pelvis" was the title of a paper by Dr. Charles P. Noble, read before the Philadelphia Obstetrical Society, June 4, 1891 (*Annals of Gynæcology and Pædiatry*, July, 1891). The subject was considered under the following heads:

1. *Pyosalpinx*.—This always, when let alone, ended fatally. Exceptionally it ruptures through the uterus or bowel, making a natural cure, or the pus may become caseous.

2. *Abscess of Ovary*.—Following the same course as above.

3. *Hydrosalpinx and Hæmatosalpinx*.—In the former a fatal termination is rare but invalidism is constant. The latter is more septic and more frequently fatal. Both destroy tubal function and produce recurrent peritonitis.

4. *Salpingitis with Adhesion and Occlusion of the Tube* entails more suffering than danger. Removal of the ovaries is justified on the ground that they are useless and their presence may at any moment threaten life.

5. *Salpingitis with Patulous Tube* causes tubal pregnancies.

6. *Chronic Ovaritis*, caused usually by salpingitis, sometimes arising independently of it, produces invalidism, etc.

7. *Intraperitoneal Inflammatory Exudate and Cellulitis*.—Medical means alone must be employed unless there be pus.

8. *True Pelvic Abscess* is sometimes spontaneously cured by rupturing into the vagina, rectum, bladder, etc.

9. *Operations in the Course of Acute Peritonitis*, falsely called conservative treatment, is responsible for years of invalidism and final death.

10. *Wrecks*.—By these the author means chronic invalids, with no very special symptoms, who have been handed from one doctor to another, and in whom an exploratory operation may reveal adherent appendages, hydrosalpinx, or some other local exciting cause.

11. *Tubal Pregnancy*.—Parvin estimates that one of these occurs in every four hundred pregnancies.

12. *Pelvic Tumors*.

The remarks which appear in the *Transactions of the Philadelphia Obstetrical Society* between the so-called radical and conservative schools of

gynæcological surgeons lead us to formulate these indications for operative interference in pelvic disease under the following three headings:

1. Operate when the patient's life is in danger; at times even when the present condition shows no immediate necessity, but when the diagnosis reveals a condition that may at any moment become a fatal one.

2. Operate when there are no indications of immediate necessity, but where the condition is such as to lead the patient to expect an attack which will sap vitality and ultimately end in death. At the best a life of suffering, exploratory examination then will be far less fatal in its results than conservatism; thus an early and accurate diagnosis will save life.

3. There is a class of doubtful cases, where many other conditions have to be considered, and where prudence and conservatism must be exercised. Questions of temperament, social position, age, and habitation have to be considered. I would not hesitate to make an exploratory incision in the abdomen of a servant girl at a well-equipped hospital, one who had to do hard manual work for her livelihood, nor in those living at a distance from an expert operator. I would be much more conservative in operating on the same kind of a doubtful case were she the wife or daughter of a millionaire, and living within a stone's throw of my own house. This refers to operations for diagnosis only.

**Renal Disease due to Intrapelvic Obstruction of the Ureter.**—In an excellent paper (*Annals of Gynæcology and Pædiatry*, August, 1891), Dr. Henry C. Coe, of New York, treats especially of renal diseases caused by occlusion at a single point, near the base of the broad ligament, due to pressure of a small induration or neoplasm, and reports nine cases. His conclusions are as follows: The ureter is most exposed to pressure within the pelvis in the last two inches of its course,—that is, between the point at which it bends downward and forward to pass beneath the base of the broad ligament and its vesical opening. At the base of the broad ligament it is most liable to be compressed by parametric indurations, and also in its passage over the roof of the vagina and through the wall of the bladder by neoplasms. The occlusion is seldom complete, gradual dilatation above the point of pressure takes place, and eventually affects the pelvis and glandular portions of the kidney. Cystitis may not be present except when there is pyelitis. The symptoms are vague, usually mistaken for those of inflammation of neck of bladder. The dilated ureter can easily be felt per vagina. First feel for spine of ischium, then slip the tip of the index-finger downward and inward along the anterior vaginal wall towards the median line. There is tenderness along the course of the affected ureter. Catheterization of the ureter would be an important aid in diagnosis. For treatment Dr. Coe advises the same course to be followed as in a case of an accessible obstruction in any other canal,—to cut down upon it at the point of obstruction and to endeavor to dissect out the compressing mass. The ordinary



anterior and lateral incisions of the vaginal fornix which are made in hysterectomy would expose the offending indurations or neoplasms.

**A Review of a Series of Fifty Abdominal Sections.**—By Dr. Joseph Price. (*Annals of Gynæcology and Pædiatry*, August, 1891.)

In this series there were two deaths. Drainage was used in twenty-seven cases. In twelve of the cases both appendages were removed for double pyosalpinx and complications with ovarian abscess. There were six supra-vaginal hysterectomies by the Koeberle method, all recovered. Six operations for blood-cysts, all difficult to enucleate, and the author considers these as the most virulent of pelvic accumulations. Dr. Price dwells on the importance of flushing and drainage in angry forms of pelvic abscesses, suppurating tubes and ovaries, with universal pelvic and disorganized adhesions, using the gravity irrigating machine with boiled water and well-placed drains. The author reiterates his belief that delay in operating is the cause of a large proportion of the mortality, and urges the general practitioner to consult the abdominal and pelvic surgeon in the apparently mildest cases of pelvic disease. He publishes an unsigned letter which is not calculated to mitigate the acerbity of discussions upon this subject.

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## OPHTHALMOLOGY AND OTOTOLOGY.

IN CHARGE OF J. E. HARPER, A.M., M.D.,  
Chicago, Illinois.

**Ocular Symptoms in the Mongolian Type of Idiocy.**—Under the title of "A Clinical Study of the Ocular Symptoms found in the so-called Mongolian Type of Idiocy," Dr. Charles A. Oliver, in the *University Magazine*, gives the results of his clinical work at the Pennsylvania Institution for Feeble-Minded Children. His conclusions are as follows:

I. In the so-called Mongolian type of idiocy, the malpositions, irregularity of contour, and inequality in comparative size of the bony orbits, with the obliquity of the attached ligamental and tarsal tissues, giving the palpebral fissures their peculiarity of direction, the lids their shortness, and the eyes their apparent relative faulty situations, are merely the rough ocular expressions of the results of the osseous and ligamental malformations so characteristic of the disorder; in fact, it is these conditions which have, more than any other, contributed to the naming of the type.

II. In the so-called Mongolian type of idiocy, the ocular bulb, in nearly every instance, presents peculiarities of structural change characterized by the appearances of the results of low and chronic forms of neuro-retinitis and choroiditis, indicative of local inflammation of these parts, both before and after birth of the individual.

III. In the so-called Mongolian type of idiocy, the substance of the

intraocular ending of the optic nerve and the circumjacent retinal and choroidal membranes, seem, in those instances where there are no marked evidences of coarse intraocular change, to share in the soft, jelly-like œdema so universally recognized in the external portions of the organ.

IV. In the so-called Mongolian type of idiocy, the mucous lining of the ocular appendages and of the anterior part of the globe, in every instance, exhibits the many gross pathological peculiarities seen in the chronic and constantly-provoked inflammation of other similar surfaces found throughout the same subject, and which in the great majority of cases leads to lethal result.

V. In the so-called Mongolian type of idiocy, the peculiar vascular changes are not only discoverable—even ophthalmoscopically—in the vessels of the retina, where the visible portions of the walls appear thin and so peculiarly tinted, and the sequelæ of fine capillary and even larger hemorrhagic extravasation into the retinal substance, with probably evidences of graver complications, are most common, but, as almost universally seen in identical imperfections and disease of intracranial vessel-structure, serve, with the general clinical features of imperfect circulation, to show, both objectively and subjectively, the prominent characteristic lesion, and probably etiological condition of the disorder, *imperfect development with consequent disease of the entire vascular system.*

**The Causes of Asthenopia.**—Dr. D. B. St. John Roosa (*New York Medical Times*, November, 1891), writing on “The Causes of Asthenopia,” concludes :

I. That errors of refraction of a decided degree may of themselves, in healthy, non-neurotic subjects, cause asthenopia.

II. Especially is this true of hypermetropia or mixed astigmatism. Asthenopia is comparatively rare in myopes.

III. Slight errors of refraction are the rule in the human race, and do not of themselves cause asthenopia.

IV. Muscular insufficiencies are entirely the consequences of errors of refraction.

**Simple Extraction of Cataract.**—Dr. Edward Jackson (*The College and Clinical Record*, November, 1891) writes on simple extraction of cataract. Except in selected cases, he does not make an iridectomy. He uses a knife of his own invention, makes the incision in front of the limbus well away from the iris, and the incision is nearly or quite half of the circle of which it is a part. The capsule is opened with the knife, no cystotome being used. He attaches no importance to small quantities of transparent cortical substance left in the capsule, as they do not interfere with the permanent result. After delivering the lens, he washes out the anterior chamber with boracic-acid solution. A prolapsed iris is best repositied by a stream of antiseptic wash. If necessary a stream is directed into the capsule.



Eserine is instilled after washing. Prolapse of iris is not more frequent than in the old method.

Visual acuteness is better than where iridectomy is made. In old age the pupil is diminished normally. Where a large amount of light is let in on the retina by an iridectomy diminished vision results. Observation of this fact led the doctor to adopt extraction without iridectomy.

**Temporary Exophthalmos following "Grippe."**—Dr. Peter A. Callan (*Arch. Ophthal.*, July, 1891) reports a case of temporary exophthalmos and ophthalmoplegia following "grippe." At autopsy a circumscribed sac of serous fluid was found between the dura and pia mater, covering both sphenoidal fissures, the optic groove, olivary process, and sella turcica. The pressure of this sac on the sphenoidal fissures and optic foramina caused the ophthalmoplegia externa and the exophthalmos.

**Removal of Insects from the Ear.**—Dr. Lutz, of Fleetwood, Pa., reports the removal of twelve live insects, resembling flies, from the ear of a ten-year-old girl. They seemed to have been hatched in the middle ear.

**Pilocarpine in Syphilitic Disease of the Labyrinth.**—Dr. I. M. Smith (*Buffalo Medical Journal*) reports particularly good effects from the hypodermic use of pilocarpine in cases of syphilitic disease of the labyrinth.

**Galvanism in Chronic Middle-Ear Disease.**—Dr. W. E. Baxter (*Arch. Otol.*) reports ten cases of chronic middle-ear disease treated by the galvanic current, after other means had failed. Improvement in two cases.

Dr. J. A. Spalding (*ibid.*) finds benzoinol the best preparation for moistening the cotton artificial membrane.

Dr. J. A. Spalding (*ibid.*) reports the removal of a bit of hickory-nut shell which had remained in an ear for twenty-four years. Hearing was perfect.

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## DISEASES OF THE LARYNX, NOSE, AND SURROUNDING STRUCTURES.

IN CHARGE OF J. PAYSON CLARK, M.D.,  
Boston, Massachusetts.

**Intubation.**—Drs. W. H. Prescott and Joel E. Goldthwait,<sup>1</sup> of Boston, report three hundred and ninety-two cases of intubation and one hundred and thirty-nine cases of tracheotomy performed at the Boston City Hospital

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<sup>1</sup> Boston Medical and Surgical Journal, December 31, 1891, p. 694.

in the last four years. Of the tracheotomy cases, eighty-two were primary operations, thirty-six after intubation, and twenty-one after attempted intubation. During 1890 intubation was the usual operation, and tracheotomy was resorted to only in exceptional cases or as a secondary expedient. Formerly the patient was placed in a sitting posture; more recently he is put in a recumbent position with a small pillow under the neck, where he can be more easily operated upon and held securely.

Of the three hundred and ninety-two cases, three hundred and twelve died and eighty recovered (20.41 per cent.); thirty-six cases were followed by tracheotomy, with three recoveries. More than ten per cent. of all the cases were moribund on admission to the hospital. The age of the child seems to exercise a decided influence upon the chances for recovery, as shown in the following table :

Age.	Cases.	Recoveries.	Percentage.
Under three years.....	123	18	14.63
From three to five years.....	183	43	23.05
From six to ten years.....	55	17	30.90
Ten years and over.....	10	2	20.00

The average length of time the tube was worn in the cases that recovered was about five and a half days. The longest period in one case was twenty-three days. In fatal cases the average was about two days. The younger the child the longer it must be worn.

In conclusion, they show a mortality rate of 79.59 per cent. after intubation and 85.5 per cent. after tracheotomy. In two thousand eight hundred and fifteen cases of the former and twenty-three thousand nine hundred and forty-one cases of the latter collected, the mortality was about the same. "The results depend more upon the nature of the epidemic than upon the operation." Thirty-seven cases were seen at least a year and a half after their recovery, with "perfect voice" and no evidence of any laryngeal ulceration.

**The Human Mouth as a Focus of Infection.**—Dr. W. D. Miller,<sup>1</sup> of Berlin, declares that there is a growing conviction among observers during recent years that the oral cavity plays a significant rôle in the production of various disorders of the body through the enormous number of pathogenic germs which infest it. Such a condition would explain very readily the production of certain cases of pharyngitis, tubal catarrh, otitis, etc. He cites the following diseased conditions as traceable to this cause: 1, dental caries, followed by osteitis, necrosis, etc.; 2, croupous pneumonia; 3, tonsillitis and other infectious anginae; 4, pneumococcus abscesses; 5, actinomycosis; 6, noma, or gangrenous stomatitis; 7, diphtheria; 8, tuberculosis, etc. The bacteria which he mentions, seven in number, are all powerful and each possesses a long name.

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<sup>1</sup> Journal of Laryngology and Rhinology, September, 1891.



For prophylaxis cleanliness is essential, and to accomplish this end several complicated mouth-washes are detailed, the best being—

R Acid. benzoic.,  $\mathfrak{Z}i$ ;  
Tinct. eucalyp.,  $\mathfrak{Z}iv$ ;  
Ol. menth. pip., gtt. xii;  
Alcohol, abs.,  $\mathfrak{Z}iiiss$ .

**Resorcin in Laryngeal Phthisis.**—Dr. Tymonsky adds a valuable contribution to the literature of this subject.<sup>1</sup> When the hygienic surroundings are favorable, rest and carefully-directed diet are sufficient to allow simple erosions and even ulcers to heal. When the latter are very deep, with considerable infiltration of the surrounding tissue, cocaine and alkaline inhalations are administered. When the inflammation can be reached in this way, lactic acid from fifty to eighty per cent. or resorcin eighty per cent. may be applied with advantage. Iodoform is best applied only when the ulcers are covered with abundant granulations, and should be repeated *twice* a day. The author thinks resorcin is the most convenient of these remedies, as its application gives no pain and its use is necessary only once a day. The solution should be of one hundred per cent. strength when the unhealthy-looking ulcers are undoubtedly of tubercular origin. Resorcin is antipyretic, antiseptic, and hæmostatic. It may be given internally in quantities of three or four grammes a day. Dr. Unna has frequently employed this drug in chronic recurrent ulcerations of the skin.

## DERMATOLOGY.

IN CHARGE OF W. A. HARDAWAY, A.M., M.D.,

Professor of Diseases of the Skin in the Missouri Medical College, St. Louis; Member of the American Dermatological Association.

**The Cutaneous Absorption of Drugs Incorporated in Fatty Substances.**—In writing a prescription for an ointment, it is often difficult to decide which is the best *base*. Interesting and valuable in this direction are the researches of M. L. Guinard,<sup>2</sup> undertaken to determine (1) whether fatty substances—lard, vaseline, or lanoline—are absorbed by the unbroken skin; (2) if cutaneous absorption be established, whether there exists any difference in the fats as regards absorption; (3) if fatty absorption be not demonstrated, what excipient would yield more of the active principle incorporated in it? His results are: Iodide of potassium in lard, vaseline, or lanoline, well rubbed in, is not absorbed. A similar result was obtained with mercury, morphine, strychnine, and atropine. The conclusions reached, therefore, are that in man absorption fails to take place through

<sup>1</sup> Monatsschrift für Ohrenheilkunde, May, 1891, No. 5, p. 153.

<sup>2</sup> Lyon Médical, 1891, No. 36, p. 6, and No. 37, p. 37.

an unbroken skin, and that lanoline is not of any more value than vaseline or lard.

**The Treatment of Erysipelas.**—Although this disease is not seen as frequently in these days of antiseptics as it was formerly, the valuable paper of Dr. Stanislaus Klein<sup>1</sup> is none the less interesting. He has been a careful observer of the clinic of Professor Stolinkow, in Warsaw, and presents his deductions from the experience of two years. He employs the following method of treatment: The diseased surface is cleansed by washing with soap and water (or with concentrated aqueous solution of carbolic acid, Fessler), and an ointment of equal parts of vaseline and ichthyol, or of equal parts of ichthyol, water, and lanoline, thoroughly rubbed in with the hand over the area of disease and for a distance of a hand-breadth around it. Over the anointed surface a thin layer of salicylic-acid-cotton dressing, covered by a thick layer of absorbent cotton, is applied. This is reapplied two or three times daily until the temperature has been normal for three or four days. He concludes that ichthyol is beneficial by its reducing action on the tissues, or by its influence upon the micro-organisms, or by both; that it shortens the duration of the disease one-half; that the duration of treatment is three or four days, and that in this way the course of the disease is much milder.

**Herpes of the Face and Cornea.**—Under this title Dr. Casey A. Wood read a paper before the Chicago Medical Society.<sup>2</sup> He recognizes two forms, one very painful, very chronic, and less amenable to treatment, often tending to deep ulceration of the tissues, and sometimes to the destruction of the eye. "The other, more frequently met with, more directly influenced by proper remedies, and more superficial in character, usually healing without doing much harm." Horner<sup>3</sup> called the former *herpes zoster ophthalmicus* or *zona ophthalmica*, and the latter *herpes febrilis* or *catarrhalis*. While this is a convenient clinical division, the writer goes on to say that it cannot be supported by pathological demonstration. The herpetic vesicles in both forms follow the distribution of the superficial sensory nerves, "and considers it an essential lesion of true neuritis." "In all forms of herpes frontalis it is the ophthalmic division of the fifth nerve (giving off its main branches, the lachrymal and frontal) that we have to deal with."

When the main nerve-trunks are affected by the neuritis, we have true *zona ophthalmica*; when only the terminal filaments are inflamed, the milder form is produced. This is supported by the post-mortem evidence produced by Wiedner<sup>4</sup> and by Wyss.<sup>5</sup> This neuritis is caused by the same factors

<sup>1</sup> Berliner Klinische Wochenschrift, 1891, No. 39, p. 958.

<sup>2</sup> The Chicago Medical Record, March, 1891, p. 15.

<sup>3</sup> Klin. Monatsblatt für Augenheilkunde, 1871, p. 321.

<sup>4</sup> Zeigler's Pathology, Am. ed., p. 523.

<sup>5</sup> Archiv der Heilkunde, 1871, p. 263.



which bring about any inflammation. It has also been observed that anæsthesia of the skin sometimes follows such an attack. This is due, no doubt, to a true paralysis of the sensory nerve. The treatment adopted by this observer has been to relieve the pain by anodynes, and to apply to the cornea a weak eserine solution, combined with the frequent use of boracic acid in a mild solution of mercuric chloride.

## HYGIENE AND BACTERIOLOGY.

IN CHARGE OF A. C. ABBOTT, M.D.,

First Assistant in the Laboratory of Hygiene, University of Pennsylvania.

“De quelques Associations microbiennes dans la Diphthérie.” The Association of Bacteria in Diphtheria.—Barbier (*Arch. de Méd. Exp. et d'Anat. Pathol.*, May, 1891) describes three different varieties of streptococci which he has observed to be associated with the bacillus diphtheriæ of Löffler in cases of diphtheria. The most important of this group of streptococci is probably the ordinary streptococcus pyogenes. The author believes a form of mixed infection to exist as a result of the association of these streptococci with the bacillus diphtheriæ. Either the streptococci gain access to the tissues and prepare the way for the bacillus diphtheria, or both organisms exist from the beginning together, or the streptococci appear accidentally in the membranes subsequent to the pathogenic activity of the diphtheria organisms.

He believes those cases of diphtheria in which the mixed infection exists to be more dangerous than in purely uncomplicated cases. He claims that the constitutional manifestations are much more serious in the former than in the latter. (Reviewer questions this view because of the almost constant presence of streptococci along with the bacillus diphtheriæ in cases of true diphtheria. The number of cases from which they are absent is relatively so small as hardly to justify one in saying that they are either milder or more severe than the mixed cases.)

Knorr, R.: “Untersuchungen über die Verschlechterung der Luft durch Gasheissapparate.” Experiments upon the Pollution of the Air by Gas Heaters. (*Arch. f. Hygiene*, Bd. xi., Heft 1.)

These experiments of Knorr upon pollution of the air resulting from gas heaters were suggested by two serious cases of poisoning occurring in private residences where gas heaters were used. The rooms in which the gas stoves were located were small and without means of ventilation, and as there was no evidence of escaping illuminating gas into the room, the conclusions were that the toxic results appeared in consequence of an excess of carbonic acid and a diminution in the amount of oxygen in the air of the room, as a result of the method of heating. To confirm this belief, ex-

periments were arranged to duplicate the conditions found in the apartments in which the accidents occurred. The results were that during and after the use of the heater the air of the room was polluted to an enormous degree with carbonic acid, and at the same time was deprived of nearly 25 per cent. of its oxygen. Expressed in figures, the results of Knorr's analyses were, in one instance, carbonic acid, 2.64 per cent., in another, 2.78 per cent., from sixty-six to seventy times as much as is commonly present in the outside atmosphere. The proportion of oxygen in the air of this room was diminished from 20.8 per cent., the normal amount present in the atmosphere, to 16.97 per cent.

Frosch and Clarenbach: "Ueber das Verhalten des Wasserdampfes in Desinfectionsapparate." The Behavior of Steam in Steam Disinfectors. (*Zeitschrift f. Hygiene*, Bd. ix., Heft 1.)

In their studies upon the behavior of steam in steam disinfectors, Frosch and Clarenbach directed their attention to the following points:

1. The distribution of the temperature within the apparatus.
2. The alterations in resistance offered by the objects to be disinfected, resulting from repeated applications of the steam.
3. The influence of tension upon the length of time necessary for the penetration of the steam.
4. The influence of the quantity of steam upon the rate of penetration.
5. The influence of the quantity of the material in the sterilizing chamber.
6. The influence of the direction in which the steam is introduced into the disinfecting chamber.
7. The temperature to which the objects being disinfected are subjected.

Their conclusions, which are of much practical importance as a guide to the proper employment of this method of disinfection, are as follows:

1. The form and size of the disinfecting chamber have no effect upon the rate of penetration of the steam. In all disinfecting chambers the distribution of temperature through all its parts is homogeneous; dead spaces do not exist.

2. The velocity with which steam is introduced into the apparatus is of significance only in so far as it hastens the filling of the chamber. When the chamber is once filled it is then only necessary to admit enough steam to replace that which is condensed during passage through the apparatus and its contents. From an economical stand-point it is well to reduce the amount of condensation by encasing the apparatus in some non-conducting medium.

3. The rate of penetration of steam into objects to be disinfected is slower when directed from below upward than when from above downward. It is therefore better to admit the steam to the chamber at the highest and release it at the lowest point.

4. The rate of penetration of steam is not affected by the volume of



objects in the disinfecting chamber. It is therefore economical always to fill the chamber to its fullest extent.

5. With steam under slight tension the desired temperature of 100° C. is more quickly reached than when simple streaming steam is employed. This pressure need not exceed one-twentieth to one-tenth of an atmosphere. With small objects, however, such as bandages, dressings, etc., the excess of pressure is hardly necessary. Without it the process is less costly, less dangerous, and just as effectual. For the disinfection of large objects, however, it is advisable to employ steam under slight tension.

This contribution is particularly valuable in making clear many points which are essential to the proper construction and manipulation of steam disinfectors.

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## PATHOLOGY.

IN CHARGE OF A. J. SMITH, A.M., M.D.,

Professor of Pathology in the Medical Department of the University of Texas, Galveston, Texas.

**Russell's Cancer Micro-Organism.**—Dr. William Russell, of Edinburgh, in a paper read before the Pathological Society of London, in December of 1890, described the occurrence in cancers of certain bodies, which he was able to demonstrate by special methods, notably by the use of acid fuchsin stain, and which he regarded as micro-organisms characteristic of this variety of tumor formation. In connection with the subject, Dean shortly after published the results of a number of control observations (*London Lancet*, April 4, 1891). At the outset of his study he subjected a number of specimens of cancer to an examination according to the methods prescribed by Russell, and in all the cases the fuchsin bodies were found in greater or lesser number. The most characteristic bodies always occurred in the connective tissue, in capillaries, or in lymph-spaces. These bodies are variable in size and, as a rule, of a rounded shape. Not infrequently, as a result of the methods of Russell, the nuclei and nucleoli of the cancer cells present a color exactly like these fuchsin bodies. Inasmuch as every now and then this peculiarity is seen in a number of cells within circumscribed areas, the author is disposed to suspect that the occurrence is due to the action of some chemical agent upon the cells or to a degeneration from some change in nutrition. In some instances, the fuchsin bodies were intimately associated with irregular-shaped masses of hyaline-like substance, giving the same color (red with Dr. Russell's, purple with Gram's stain) and glossy appearance as the fuchsin bodies. In other cases the bodies were found in close relation with hyaline masses in and around blood-vessels. It would seem probable from these coincidences that the bodies are of a nature similar to hyaline degeneration; and in fact hyaline degenerated tissues are remarkable for the fact that they give similar color reactions

with fuchsin or eosin in acid solution, and that they form rounded masses. The author does not look upon these masses as due to the action of the reagents (although they may be due to post-mortem changes in the tissues), as they may be observed in fresh sections. Following this inquiry into the nature of these cancer bodies of Russell, the writer states that out of a comparatively small number of cases other than cancer he succeeded in discovering the same bodies in six instances. Two of these cases were typical instances of uterine myoma without a suspicion of cancer; one was a case of syphilis of the lung, in which the bodies were found in the connective tissue about the bronchial glands; one was a case of phthisis; the fifth and sixth were from normal specimens, one from a non-lactating breast of a woman, the other from a lactating mammary gland.

From these observations the author concludes: 1. That these bodies are not to be regarded as micro-organisms. 2. Even admitting that they were of micro-organismal nature, it could not be credited that they are characteristic of cancer.

**Dermoid Cyst of the Brain.**—Kruse (*Deut. Med. Wochenschr.*, No. 15, 1891) reports the discovery of a cyst containing a mass of hair and glistening, pasty material in the fourth ventricle of the brain of a man, dead at the age of twenty-eight years from phthisis. The tumor extended from the lower end of the ventricle to above the acoustic striæ, and its upper surface pressed upon the cerebellar tissue. The wall of the cyst was composed of a highly-vascular connective tissue, lined with epithelium and containing hair follicles. At spots it was adherent to the cerebellar and medullary surfaces. The author cited two other cases of brain dermoid,—one of the cerebellum, the other of the right corpus striatum. In the author's case the tumor, of the size of a small walnut, caused no symptoms, although occupying so important a position as the fourth ventricle.—*Rev. of Insanity and Nerv. Dis.*, September, 1891.

**A Thermogenic Substance in the Urine.**—Binet (*Rev. Méd. de la Suisse Romande*, October 20, 1891), working in Prevost's laboratory, has isolated a substance from human urine which, when inoculated into guinea-pigs, under certain circumstances determines a rise in temperature of one, two, or more degrees. This substance is carried down in amorphous precipitates and may be redissolved by glycerin, from which it may be reprecipitated by alcohol, thus corresponding in these respects to the soluble ferments. It is invariably found in the urine of tubercular individuals, but also exists in other pathological urines, and in a less degree generally in normal urine. Tubercular animals are especially sensitive to its influence; however, one may often see some reaction in healthy animals, particularly young ones and females during lactation. In these latter classes, however, its action is much less constant, less regular, and generally less intense than in the tubercular. The maximum temperature is usually reached about



three hours after the injection of the substance; and, as a rule, the fever persists for about four or five hours. It generally begins about the second hour after the injection, although this is by no means absolute. The manner of preparation is briefly as follows: To a fixed amount of urine a small amount of phosphoric acid is added to acidulation, and then a small quantity of chloride of lime, and afterwards enough lime-water and soda solution to entirely neutralize. Under these conditions a flocculent precipitate of phosphate of calcium is thrown down and carries with it the substance in question. The precipitate having been washed with alcohol and dried, is treated with glycerin, which extracts the thermogenic material. From the glycerin it is precipitated by the addition of alcohol, and after separation by filtration may be redissolved by water. It may be used for subcutaneous injection either in its glycerin solution or in aqueous solution. (It is interesting to note in this connection the fact that Dixon has found the subcutaneous injection of solutions of creatinine to be followed by a febrile reaction in tubercular animals. It is also apropos to recall the fact that in the urine of rabbits inoculated with the pyocyanic micro-organism Bouchard [*La Sem. Méd.*, June 6, 1888] has discovered a substance possessing powers of immunity against primary inoculation with this *bacillus* when injected into other animals.—ED.)

**An Ossified Hydatid Cyst.**—Before the Anatomical Society of Paris, M. Chibret (*Bull. de la Soc. Anat.*, July 17, 1891) presented sections of the wall of a hydatid cyst of the kidney. The wall of the cyst was calcified, but in the section one could find in spots true ossification. The new bone tissue showed the Haversian system, and large medullary lacunæ.

**An Undescribed Species of Tape-Worm.**—Hatch (*Trans. Phila. Path. Soc.*, vol. xv. p. 342) announces the discovery of a new form of tape-worm which he has encountered in the intestinal tract of the python. From two of these serpents he has obtained nine specimens of the worm, one from the first and eight from the second. He designates the worm by the term *Dibothrium Milliapharyngeus*, and describes it as follows: "The worm has a double head, each head being provided with a sucker but no hooklets. The strobile varies in the specimens found from several inches in length to as many feet; the segments are very narrow and close together in the neck, and the gills very numerous. . . . Lower down the segments lap over each other. The genital pore is in the centre of each segment, the genital apparatus radiating from this opening."

# FORENSIC MEDICINE.

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IN CHARGE OF LORENZO D. BULETTE,  
Of the Philadelphia Bar.

## *LEGAL LIABILITY OF PUBLIC CHARITABLE HOSPITALS FOR INJURIOUS TREATMENT OF PATIENTS.*

THE legal liability of public hospitals for the injurious treatment of patients through their physicians, surgeons, and attendants has, perhaps, been left somewhat in doubt since, on nearly identical groups of facts, the courts of last resort in two different States have reached directly opposite conclusions. It is the purpose, therefore, of this paper, by a discussion of these cases, to ascertain and define the legal status of public charitable hospitals with respect to the patients received and treated therein.

In *McDonald v. Massachusetts General Hospital*,<sup>1</sup> the evidence showed the following facts: That the plaintiff, who by falling from a building had sustained a fracture of his thigh-bone, was received into the hospital of the defendant by its superintendent, where, for more than three weeks, he received gratuitously the surgical and medical care and attendance which the hospital affords to its patients. He occupied a free bed, and all the expenses of his medical and surgical treatment and nursing, and of his shelter, warmth, and food, were borne as a charity by the hospital. The house-pupil, who set the fractured thigh-bone, in the first instance, against the plaintiff's protest,—he desiring the resident physician,—afterwards continued to attend the patient under the direction of the visiting surgeon. The house-pupil was well recommended for his post by the staff of visiting physicians, and the visiting surgeon, under whose direction and supervision the house-pupil acted in his treatment of the fractured bone, was a man of the highest professional reputation and character; and both treated the plaintiff's case gratuitously according to the regulations of the hospital. The trial court held that, even if the plaintiff should prove that the fractured bone was not properly set, in consequence of the incompetency of the house-pupil, or the negligence of him or the attending surgeon, the plaintiff was not entitled to recover, since the corporation could not be presumed to have agreed to do more than furnish hospital accommodations, and also for the further reason that any judgment recovered against the corporation could only be satisfied out of funds which, being dedicated to the charity, could

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<sup>1</sup> 120 Mass. 432 (1876).



not be lawfully used to pay such judgment. The jury returned a verdict for the defendant, and the Supreme Judicial Court affirmed this ruling, and ordered judgment on the verdict.

In *Glavin v. Rhode Island Hospital*,<sup>1</sup> the evidence at the trial showed that the plaintiff had two fingers of his right hand sawed off; and that he made application to the hospital for surgical care and attendance, for which he was to pay a reasonable compensation. He was received by the superintendent and placed in charge of a hospital *interne*, who etherized him and undertook to dress his wound; and after a vain attempt to check, by ligating the arteries, a profuse hemorrhage caused by his unskilfulness, he applied a tourniquet to the plaintiff's arm so tightly as to stop circulation, and kept it so applied for seventeen hours before the arrival of a surgeon who was skilful enough to ligate the arteries; that the plaintiff in consequence suffered excruciating pain,—his arm was enormously swollen and afterwards mortified so that amputation became necessary.

The defendant's evidence showed that the hospital was conducted as a charity, deriving its income from voluntary contributions and endowments; that the attending physicians and *internes* gave their services without compensation, except that the latter received their board and lodging at the hospital. The reasonable compensation received from the plaintiff was intended to defray the expense of board, washing, warmth, and the services of nurses and ward tenders. The trial court, guided by the law as laid down in *McDonald v. Massachusetts General Hospital*<sup>2</sup> directed a verdict for the defendant. The Supreme Court declared against the law as laid down in the instructions of the lower court, and granted the plaintiff's petition for a new trial.

The two cases bear throughout a striking similarity: both defendants in their corporate capacity dispensed a public charity, deriving their resources from grants, bequests, and voluntary contributions; in both, the surgeons acted gratuitously, and the patients were not benefited by the treatment; the injuries in both cases were severe, and a regular visiting physician was desired by the patient in the first instance; in one case the plaintiff when first received was treated by a house-pupil, in the other by a surgical *interne*. In both cases action for damages was brought by the patient against the hospital for the unskilful and negligent treatment by its physicians, surgeons, and attendants; and in one case the Supreme Judicial Court of Massachusetts holds that the defendant is not liable, while the Supreme Court of Rhode Island holds that it is.

Can the hospital claim immunity on the ground that its advantages were offered gratuitously to the injured? The individual practitioner may not. And, although there are, in the books, expressions which seem to favor that view, they are merely *dicta*; while the single case<sup>3</sup> frequently cited in

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<sup>1</sup> 12 R. I. 411 (1879).

<sup>2</sup> 120 Mass. 432.

<sup>3</sup> *Richey v. West*, 23 Ill. 385.

support of the proposition that the want of compensation excuses the physician from any but gross negligence was, in a later case,<sup>1</sup> explained away and practically overruled; and we find the court in its changed opinion saying, "that if a person holds himself out to the public as a physician, he must use the ordinary care and skill in every case of which he assumes charge, whether in the particular case he has received fees or not." And this is undoubtedly the law as supported by the authorities.

The relation subsisting between the hospital, on the one hand, and the surgeon, the *interne*, and the house-pupil, on the other, has all the elements of the relation of master and servant; and such it is. The trustees of the corporation select, employ, and discharge the physician, the house-pupil, and the *interne*; and, though it is true that the latter are not directly remunerated for their services, yet they receive indirect compensation from the corporation through the opportunities afforded for acquiring skill, experience, reputation, and subsequent practice in their profession. The corporation offers its hospital advantages, gratuitously if necessary, to the sick who are in need of them; the difference in this respect between it and the individual physician is that, while the latter may perform the service himself, the corporation cannot give the medicine or the treatment, but must do it through an agent. The act of the agent is the act of the corporation. The circumstance is the same as if the corporation were itself a physician, and offered to perform the service gratuitously. The fact that the services were not paid for did not, as we have seen, make any difference in the case of the physician, neither does it relieve the hospital of the duty of exercising reasonable care and skill in the treatment of its patients. If it has any immunity in this respect it can only be because it is protected by public policy or legislative act; certainly the courts cannot screen it from the consequences of its negligence.

The Massachusetts General Hospital bases its claim for exemption from liability on two grounds: *first*, on the ground of public policy; and, *second*, on the broad proposition that the hospital is a charitable corporation and therefore not liable for the injuries received by the plaintiff.

The argument for exemption on the *first* ground, of public policy, is that hospitals, like the Rhode Island and the Massachusetts General, are a public benefit; but if they are made liable for the torts of the surgeons attendant on them, or of the *internes* or nurses, charitably-disposed persons will be discouraged from contributing to their foundation and maintenance, and therefore public policy demands that they shall be exempted from liability. The argument will not bear examination. The public is, without doubt, interested in fostering such great public charities; but it also has an interest in obliging every person and every corporation which undertakes the performance of a duty to perform it carefully, and to that extent, therefore, a sound and enlightened public policy has an interest against ex-

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<sup>1</sup> *McNevins v. Lowe*, 40 Ill. 210.



empting any such corporation from liability for its negligence. Where two public policies clash it is not difficult to see which, in this case, will prevail.

In support of its claim for exemption on the *second* ground, the hospital points to the fact that it has no capital stock, no provision for making dividends or profits; that whatever funds it receives from any source it holds *in trust*, and so exclusively dedicated to the charitable uses for which it was established that no part thereof can be applied to indemnify a patient injured by the malpractice of a visiting physician or surgeon, or by the negligence of a medical or surgical *interne*.

And, continuing, the Massachusetts court says, "It might well be questioned whether any contract could be inferred between the plaintiff and the defendant. It has offered him freely those ministrations which, as a dispenser of a public charity, it has been able to provide for his comfort; and he has accepted them. It has no funds which can be charged with any judgment which he might recover, except those which are held subject to the trust of maintaining the hospital. If, however, any contract can be inferred from the relation of the parties, it can only be on the part of the corporation that it shall use due and reasonable care in the selection of its agents. When actions have been brought against commissioners of public works serving gratuitously, for negligence in carrying on the work, by which injury has accrued, it has been held that they were not liable, if proper care had been used by them in selecting those who were actually to perform the work." And the court supports this proposition on the single case of *Holliday v. St. Leonard*,<sup>1</sup> decided in 1861. Now in 1864 the law of this case was strongly criticised, if not practically overruled, by the House of Lords in the leading case of *Mersey Docks v. Gibbs*;<sup>2</sup> and its authority has since been directly rejected in *Foreman v. Mayor of Canterbury*,<sup>3</sup> and is therefore of no weight in English courts to-day,—a fact which was apparently overlooked by the court in *McDonald v. Massachusetts General Hospital*. The requirements of space forbid a recital of the facts of the leading case or any extended examination of that or the later cases; but, briefly stated, the doctrine therein laid down is, that a board or public body having work to do for the public gratuitously are liable for the torts of their servants or employés, the same as a private business corporation, provided they have funds, or are in receipt of an income out of which a judgment can be satisfied.

In view of these later decisions the question arises whether charitable corporations, like the Massachusetts General and Rhode Island Hospitals, fall within that class of public corporations for governmental purposes, which constitute an exception and are exempted from liabilities for the wrong-doing of their servants. The question is, whether hospitals which hold their property for charity, are more highly privileged than a corpora-

<sup>1</sup> 11 C. B., N. S. 192.

<sup>2</sup> L. R., 1 H. L. 93.

<sup>3</sup> L. R., 6 Q. B. 214 (1871); *Coe v. Wise*, L. R., 1 Q. B. 711 (1866).

tion created for public, municipal purposes, which holds its property for such purposes,—whether, in fact, *because* it holds its property for the charity, it is relieved from all responsibility for the torts or negligences of its officers, trustees, agents, or servants. “We have come to the conclusion,” says the Supreme Court of Rhode Island, “after much and careful consideration of the cases,<sup>1</sup> that it is not. We understand the doctrine of the cases which we have just been considering to be this: that where there is a duty there is, *prima facie* at least, liability for its neglect; and that when a corporation or *quasi*-corporation is created for certain purposes which cannot be executed without the exercise of care and skill, it becomes the duty of the corporation or *quasi*-corporation to exercise such care and skill; and that the fact that it acts gratuitously and has no property of its own in which it is beneficially interested, will not exempt it from liability for any neglect of duty, if it has funds, or the capacity of acquiring funds, for the purposes of its creation, which can be applied to the satisfaction of any judgment for damages recovered against it.

“We also understand that the doctrine is that the corporate funds can be applied, notwithstanding the trusts for which they are held, because the liability is incurred in carrying out the trusts and is incident to them. We do not understand, however, that the corporate property is all equally applicable. For instance, in the case of the *Mersey Docks v. Gibbs*, it was not decided that the docks themselves could be resorted to, but only the unapplied funds which the board then had or might afterwards acquire. So in the case at bar, it may be that some of the corporate property, the buildings and grounds, for example, is subject to so strict a dedication that it cannot be diverted to the payment of damages. But however that may be, we understand that the defendant corporation is in receipt of funds which are applicable generally to the uses of the hospital, and, following the decision in *Mersey Docks v. Gibbs*, we think that a judgment in tort for damages against the corporation can be paid out of them. Indeed,” as the court pertinently adds, “we cannot see why these funds are not as applicable to the payment of damages for tort as to the payment of counsel for defending an action for such damages. Both payments are to be regarded as incident to the administration of the trust.”

The question, therefore, is, in a certain sense, still an open one, there being a decision each way. But in view of the fact that the single case on which the hospitals rely to exempt them from liability has been emphatically overruled in England, and that the later disposition of the courts in this country also is to impose the liability in similar cases, it is easy to predict the result should the matter again come into litigation.

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<sup>1</sup> *Bigelow v. Randolph*, 14 Gray (Mass.), 541; *Hill v. City of Lowell*, 1 Allen (Mass.), 172; *City of Richmond v. Long's Administrators*, 17 Gratt. (Va.) 375; *Altwater v. Mayor, etc., of Baltimore*, 31 Md. 462; *Freeman v. City of Philadelphia*, 7 W. N. C. 45; also *Murphy v. City of Lowell*, 128 Mass. 396; *Steele v. City of Boston*, 128 Mass. 583; *Boyd v. Insurance Patrol of Philadelphia*, 113 Pa. St. 269.



Following this tendency, the Supreme Court of Rhode Island, after mature deliberation, had no hesitancy in saying that for the neglect of the *interne* to send for the visiting surgeon, as the urgency of the case and the regulations of the hospital required, the latter was answerable. And the same court, guided by the later doctrine laid down in *Mersey Docks v. Gibbs*, said with equal decision that the income of the charity fund was the source whence to extract the golden balm for the healing of this neglect.

From all of which we may safely conclude that the relation which exists between a public charitable hospital and its visiting surgeons, physicians, and nurses is that of master and servant; and for the failure of such hospital either to exercise reasonable care in the selection of its servants, or for the negligence and unskilfulness of the latter within the scope of their employment, the hospital must respond in damages to the injured patient.

L. D. B.

## BOOK REVIEWS.

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REGIONAL ANATOMY IN ITS RELATION TO MEDICINE AND SURGERY. By George McClellan, M.D., Lecturer on Anatomy at the Pennsylvania School of Anatomy; Professor of Anatomy in the Pennsylvania Academy of the Fine Arts. Illustrated from photographs taken by the author from his own dissections, and colored by him after nature. In two volumes, quarto. Vol. I. J. B. Lippincott Co., Philadelphia, 1891.

This important work has been looked for by anatomists with considerable curiosity, because so many collections of anatomical plates with descriptive text have been published within recent years. It will perhaps be most frequently compared, at least in America, with the somewhat similar works of Allen and Weisse. These two authors spent much time in making elaborate dissections and in having them copied for illustrating their respective books. In both of them, however, the artistic work was done by artists who made drawings from the dissections of the authors. In the present work the author has not only made the dissections, but has photographed them and colored the photographs as well, so that the entire work, except the printing and lithographing, is the product of his own hand.

The author of Weisse's *Human Anatomy* spent a number of years in the preparation of dissections, and the drawings made by an accomplished artist from these dissections were excellent; but the camera used by Dr. McClellan naturally gives more absolutely correct representations of nature. The letter-press in connection with Dr. Weisse's illustrations is not very elaborate, and in this respect also Dr. McClellan's book seems more valuable to the practitioner or student who may be called upon to study the anatomy of any particular region.

Dr. Allen, in his *Human Anatomy*, has given the profession most satisfactory work in what may be called the practical application of anatomy to medicine and surgery, for his elaborate references to anatomical points pertaining to medicine and surgery are most valuable. The plates, however, which are made in the same way as Dr. Weisse's, do not impress the eye as being absolute representations of structures so much as semi-diagrammatic illustrations. These criticisms are not made to disparage the works of the two authors mentioned, but to lay particular stress upon the great fidelity which the colored photographic plates of Dr. McClellan possess. The appearance and coloring are so faithfully exact that it almost seems as if one were looking upon an injected human cadaver lying on a dissecting-room table. The descriptive text is clear and sufficiently comprehensive for the use of those who refer to the volume for the purpose of refreshing the memory on anatomical details. In fact, it is a text-book of regional anatomy illustrated by perfect plates; not a series of plates with descriptive text.

Dr. McClellan, in his preface, speaks of the value of extemporaneous drawings in teaching, and states his belief that they are far better for that purpose than elaborate, previously-prepared pictures. It is very evident, from this and from his other statements, that he must be an excellent teacher for medical students. If, however, the actual cadaver cannot be obtained for the study of anatomy or for the rehearsing of such study, the plates he has here published answer the purpose as perfectly as it is possible for illustrations to do. In his descriptions he uses terms which he says experience has shown him to be more easily understood and remembered by the student than purely technical ones.



Instead of giving a description of each individual member of the osseous and ligamentous systems, followed by a detailed descriptive catalogue of every muscle, nerve, vessel, and organ, the author discusses regions of the body. This is eminently satisfactory if a book on anatomy is consulted by a physician or surgeon when making a diagnosis or studying the steps of a proposed operation. The illustrations of actual operations done upon the cadaver are valuable to surgeons especially, and are rather an unusual addition to a book which purports to be simply a treatise on anatomy. It is a feature, however, to which no one will object.

It is evident that the author has avoided the temptation of making the illustrations diagrammatically clear at the expense of truthfulness to the subject pictured. In the descriptions of the plates will be found a statement of how the dissections were prepared on each of the subjects; and in a few instances where additions have been made to the photographic plates, in order to bring out prominently some special points in anatomy, a statement to that effect is made. This feature of the work makes the reader feel that, where such notes have not been added, he is looking upon a faithful representation of the dissected body, and removes all suspicion that the beauty of these plates is due to artificial aids contributed for the purpose of increasing the artistic value at the expense of fidelity. In Plate No. 33 there has apparently been shown a rupture of one of the thyroid vessels causing the pigmented arterial injection to stain the surrounding tissues. This imperfection in the subject is truthfully shown in the tinting added to the photograph. One cannot help being pleased to see this evidence of absolute truthfulness on the part of the delineator.

The reviewer in going over the volume began to make a list of those illustrations which seemed to him particularly satisfactory and valuable, but the list soon became so large that it is impossible to give it in such a review as this. In truth, every picture portrays some important anatomical point or points, and the unusual dissections and regions displayed make very many of the plates of surprising interest.

There are some statements in the text to which exception may perhaps be justly taken; for example, on page 2, "the bones of the *head*" is apparently an inaccurate statement for "the bones of the *cranium*," and on another page the greater relative amount of splintering of the inner table of the cranial bones in cases of fracture of the cranium is erroneously attributed to its vitreous character.

The interest which at the present day is attached to cerebral surgery is a sufficient reason for repeating the following statement of Dr. McClellan: "Repeated examinations of the relations of the fissures to carefully mapped-out points after removal of a disk of bone on the heads of many cadavers have shown the author the fallacy of depending solely upon measurements, and the importance of making the artificial opening in the skull large enough to enable the operator to see the parts exposed." Occasionally the diction is a little obscure, as in the description on page 198 of the action of the sterno-mastoid muscle in causing wry-neck.

The necessities of binding have, unfortunately, obliged the publisher to distribute the plates somewhat unequally throughout the volume. This, as must happen in such cases, separates the text from the plates to which it refers. This is also due in part to the thorough manner in which the author describes the various regions, a method which requires frequent cross references to plates widely separated in the paging.

The book will be received with the greatest pleasure by those who are interested in studying or teaching human anatomy, and the publication of the second volume will be awaited with impatience. It is unnecessary to congratulate the author upon the production of this work, because he who gives the amount of labor required for the accomplishment of such a self-imposed task must feel intense gratification at what he has lived to accomplish; and the man who can produce such a book certainly has the taste, judgment, and ability to appreciate its artistic and anatomical worth.

J. B. R.

A MANUAL OF HYPODERMATIC MEDICATION: THE TREATMENT OF DISEASES BY THE HYPODERMATIC OR SUBCUTANEOUS METHOD. By Roberts Bartholow, A.M., M.D., LL.D., Emeritus Professor of Materia Medica, General Therapeutics, and Hygiene in the Jefferson Medical College of Philadelphia, etc., etc. Fifth Edition, Revised and Enlarged. Philadelphia: J. B. Lippincott Co., 1891. 8vo, pp. xviii., 540.

Bartholow's "Hypodermatic Medication" has always been an authoritative work; in its present shape it is *facile princeps*. The author states, in the preface, that "many of the articles have been rewritten, much new material has been introduced, and the various remedies have been arranged according to the terms of a classification compiled for the purpose. These changes have increased the size of the book by about two hundred pages." In the preparation of this edition he has had the assistance of his son, Dr. Paul Bartholow.

The classification adopted by Professor Bartholow is as follows: *A.* Remedies affecting nutrition: 1, Remedies increasing waste; 2, Remedies promoting the nutrition; 3, Antiseptics. *B.* Remedies affecting the nervous system: 1, Anodynes; 2, Excito-motors; 3, Depresso-motors. *C.* Remedies affecting the alimentary canal: Emetics and cathartics. *D.* Irritant injections.

The extent to which the book has been brought down to date is seen by the inclusion of Liebreich's recommendation of potassium cantharidate in the treatment of tuberculosis. The theory upon which this agent may be used is thus succinctly stated: First, that the remedy causes an abundant exudation of serum; second, that this serum is destructive of the microbes that produce pathological new formations. The care exercised in the selection of material is shown by the absence of reference to tuberculin. Although the use of preparations of iodine by intrapulmonary injection in phthisis is fully treated, we regret to find no mention of the use of this agent and of gold and sodium chloride subcutaneously, according to the method of Shurly and Gibbes.

One of the best sections of the book is that devoted to morphine. The author prefers Magendie's solution to any other preparation. We quote the following comments on the morphine-habit:

"In accordance with the usual practice, I have stated the evils of opium-taking in the strongest colors, that what influence soever I possess may be thrown against the formation of the habit. It must be admitted, however, that there is another side to the question: that examples exist in considerable numbers of men and women who have only been benefited by the habitual use of morphine or opium; who have during many years carried on business, and have carefully performed all of the duties of life incumbent on them, and have been rather more free than their neighbors from the maladies and disabilities usual to advancing years. Dr. Price, of Burlington, New Jersey, who is known as the unrelenting foe of alcohol and opium, has within the past year narrated several cases in which the facts were as just stated. Professor H. C. Wood has mentioned the influence of opium on his late uncle during the last years of his life. He does not hesitate to declare that the daily use of a few grains of crude opium increased the length of his uncle's life, and procured immunity from many distresses he would otherwise have suffered from. He gives the opinion that no proof exists showing that opium causes structural alterations in the human body.

"De Quincey died at seventy-four. His health in early life was very precarious, but he achieved an immense amount of literary work, which seems to be increasing in reputation, and is now more read than during his lifetime. He is the author of 'Confessions of an English Opium-Eater,' a book which, although full of extraordinary writing, describes a state of things as little like the reality of ordinary experience under opium as can be conceived. It cannot be doubted, I think, that De Quincey had done no better had opium never crossed his path at all.

"The case of Coleridge has, as I conceive, been misinterpreted. He suffered from acute and subacute rheumatism, and at nineteen had a most severe seizure, and



his physician prescribed, among other remedies, *opium*. It gave him most grateful relief, and he became what we now call an *habitué*; but 'as he suffered much, much may be forgiven him.' He had for many years, at least, severe pain, which only opium would quiet. The use of the anodyne began when he was eighteen or nineteen. The 'Ancient Mariner' was written while on a journey to the Lakes, or certainly was begun. My space will not permit me to go into the details of the history now told of the poem. It must be clear, however, that Coleridge wrote the greatest of his works after beginning the use of opium.

"Wilkie Collins, the English novelist, used laudanum as an aid to literary composition during his active life, and had reached the dose of one pint at the time of his death.

"The New York courts have lately made the ruling that the use of opium is of itself not a bar to testamentary capacity. I might thus multiply examples, showing that in many persons the use of opium does not impair the powers, but rather sustains and increases them. I do not wish to be understood as expressing more than that, in various instances,—in a limited number,—opium acts thus favorably. In the great majority, however, it must be said that only disaster attends on him who becomes an habitual opium-eater. I feel bound in justice to my work to state, as I have done, the reverse side of opium-eating; but at the same time no physician guards more jealously than I do the interests of his patients by refraining from the use of narcotics when it can properly be done."

S. S. C.

A MANUAL OF OPERATIVE SURGERY. By Frederick Treves, F.R.C.S. Cassell & Company, London, 1891.

Mr. Treves, while he has written a book intended chiefly for the operating surgeon, has produced one which cannot fail to be of use to the general practitioner who may from time to time be compelled to operate. The plan is so simple, the descriptions of operations are so clear and concise, and the relative advantages of the different methods are so admirably contrasted that the book will serve as a safe and easy guide under the great majority of circumstances requiring operative interference. Beginning with a section devoted to General Principles, which is worthy of the highest commendation, the book is divided into parts on the various operations, broadly classified, first, as to their character, as amputations, next, as to relations to particular structures, such as operations upon nerves, ligature of arteries, etc., and lastly, as to the region of the body involved, as operations upon the neck, abdomen, head, spine, etc. This is as practical a classification as could well be devised.

Among the distinctive merits of the book may be enumerated the system which Mr. Treves has followed of first describing the chief methods by which any particular operative result may be secured, then their relative advantages, and finally expressing his preference for one or more of them, giving his reasons therefor. In this way, if, for example, an operator desires to compare the different methods which may be employed in the amputation of the leg or thigh, he finds all the best plans described, and, at the same time, the reasons for selecting any one, under certain circumstances, in preference to the others.

Mr. Treves is thoroughly abreast of the times, and the very latest teachings of surgery, so far as they are applicable to operative work, are given in his book. In the treatment of wounds full credit is given to Sir Joseph Lister for having effected "a reformation in surgery," but Mr. Treves himself does not follow Listerian details in his dressings, the essential particulars of which, however, are in conformity with antiseptic principles. He aims at having clean, aseptic, unirritating wounds and then keeping them at rest mechanically and physiologically. He therefore emphasizes the importance of complete hæmostasis, elevation of the part, and the use of sponges dusted with iodoform and firmly bandaged to the region of the wound. After all, it is the application of the principle rather than of any particular method which

is important in antiseptic work in general, and Mr. Treves's teaching is in accord with that of Lucas-Championnière, "La chirurgie antiseptique est avant tout une question de doctrine. Une fois que le chirurgien possède bien cette doctrine, il pourra appliquer partout et avec le matériel le plus variable, le plus divers, et le plus simple, une méthode fondamentale."

It is impossible in a review of this length to mention the details which should be noted in order to do justice to a work of such exceptional ability, but we may call special attention to the excellence of the surgical anatomy throughout the book, just enough being given to elucidate each particular portion, without crowding out the more important surgical details. A careful perusal of the directions for the ligation of the various arteries gives ample evidence of the surgical judgment and anatomical accuracy which characterize all the author's work.

In the section on Excision of Bones and Joints, and in that on Tenotomy, the same qualities are shown, as they are indeed throughout the entire work.

Mr. Treves's originality is also manifest in every chapter. Mention may be made particularly of the details of the operation for the ligation of the lingual; of his teaching as to the removal of the appendix in recurring cases during the intervals of attacks; of those in regard to intestinal obstruction in general, a condition with which his name is most prominently associated; of his employment of the subastragaloid amputations, which are so seldom used in this country or England, but which are of such unmistakable value; of the admirable way in which he, in conjunction with his brother, has systematized the surgical treatment of tubercular adenitis of the neck; of his operation for removal of carious bone from the lumbar spine; of his ligation of the uterine and ovarian arteries in hysterectomy; of his treatment of psoas abscess by evacuation, irrigation, vigorous sponging, and immediate suture; of his operation for prolapse of the rectum by excision of the prolapsed portion of bowel; of his proposal to treat cicatricial stenosis of the pylorus by the formation of a gastric fistula, and by *gradual* dilatation. These constitute a partial list indicating the vigor and independence of thought with which Mr. Treves treats of surgical subjects.

In minor matters, such as those connected with operative details, the same characteristics are observable throughout the book, as, for example, in the substitution of the chisel and mallet in place of the time-honored but tedious and comparatively clumsy trephine, in removing the anterior wall of the antrum; in the strong protest against the misuse of the director, and in various other ways which want of space prevents us from mentioning, but which are apparent on nearly every page of the book. Mr. Treves has not been slow to adopt the work and suggestions of others, as witnessed in his commendation of litholapaxy in boys, his allusion to the "new era" in spinal surgery inaugurated by Macewen's operation in 1885, and in many other instances. On the whole, the book is a contribution to practical surgery which is of remarkable value, and cannot fail of a great and deserved success.

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EDITOR.



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## ORIGINAL COMMUNICATIONS.

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### *DIAGNOSTIC VALUE OF HYDROCHLORIC ACID IN GASTRIC JUICE, ETC.<sup>1</sup>*

BY R. VON JAKSCH,

Professor of Internal Medicine in the University of Prague.

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CONCERNING the quantities of hydrochloric acid normally secreted in health during digestion only a few observations exist. They are published by Moritz,<sup>2</sup> the author,<sup>3</sup> and Wohlmann.<sup>4</sup> From the experiments published by me it follows that the quantity of hydrochloric acid secreted during digestion is very variable in the healthy child, depending on the quality of the food. It, however, generally reaches its maximum from one to three hours after the ingestion of food.

Milk, by its property of combining with acids, causes the quantity of free acid to increase slowly; the secretion is more rapid after meat food, and most tardy after carbohydrates, because they are absorbed very rapidly. After feeding with pure milk the largest values of (free) physiologically active hydrochloric acid were obtained,—viz., in one hundred cubic centimetres of gastric contents 0.1615 gramme of hydrochloric acid (an average of fourteen experiments); after feeding with meat, 0.1563 gramme (an

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<sup>1</sup> Ueber die Mengen der physiologisch wirksamen Salzsäure und die diagnostische Bedeutung dieses Befundes, von Prof. Dr. R. von Jaksch (Prag.). Reprinted from the advance sheets of the third edition of the Clinical Diagnosis, etc., by the author. Translated by Dr. Carl Fresé.

<sup>2</sup> Moritz, Archiv f. Klin. Med., 1889, xliv. 277.

<sup>3</sup> V. Jaksch, Zeitschrift für Klin. Med., 1890, xvii. 394.

<sup>4</sup> Wohlmann, Jahrb. f. Kinderheilkunde, 1891, xxii. 297.

average of eleven experiments); and the last quantity, 0.1102 gramme (an average of ten experiments), after the ingestion of carbohydrates.

The secretion of hydrochloric acid in adults is subject to similar laws. Thus, using my modification of Sjögqvist's method, I found in one hundred cubic centimetres of gastric contents, after taking twenty grammes of ham, 0.0643 gramme of hydrochloric acid after thirty minutes, 0.1529 gramme of hydrochloric acid after forty-five minutes, and 0.0992 gramme of hydrochloric acid after one hour. These observations teach the necessity of ascertaining at what time the food was taken by the patient and the kind of food ingested by him, when the quantity of hydrochloric acid present is to be made use of for diagnostic purposes.

The absence of free hydrochloric acid or the presence of mere traces from one-quarter to one-half hour after the ingestion of food is without pathological significance. A grave disturbance of the gastric function, however, exists when no hydrochloric acid is found from one to three hours after the administration of meat or milk. Large quantities of hydrochloric acid, even up to 0.33 per cent., found three hours after the ingestion of meat or milk do not justify the conclusion of the existence of hypersecretion.

All these points have to be well considered when judging of the diagnostic value of the qualitative tests. It further follows that only those methods are admissible for scientific purposes which actually show those quantities of hydrochloric acid which are physiologically active. None of the color-reactions answer these requirements; they, however, possess unquestionable value as approximate tests for the practising physician and for hospitals, because they can be applied rapidly.

The following methods are necessary for scientific investigations.

1. Von Jaksch's<sup>1</sup> method. In this method for determining the quantity of hydrochloric acid in gastric juice, the latter is not filtered, as much of the acid is lost by filtration.

2. Methods by which it is actually possible to determine the quantity of physiologically active hydrochloric acid. Researches on artificial digestion, particularly those by Kossler, have shown that these requirements are solely fulfilled by Leo's method; whether this holds good in respect to gastric juice has to be shown by further observations. Notwithstanding some objections, my modification of Sjögqvist's method will yield relatively correct figures. For scientific researches it is, therefore, advisable to use both methods side by side, considering the present state of this question.

In respect to the terms "free" and "combined" hydrochloric acid, I must insist that I consider the description "physiologically active" and "pathologically not active" hydrochloric acid more appropriate. I describe as physiologically active hydrochloric acid that hydrochloric acid which already has done its work and has combined with proteid bodies, or which is yet for disposal,—that is, really free.

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<sup>1</sup> V. Jaksch, l. c.



Our knowledge concerning the function of the stomach in a great variety of pathological conditions has been much widened in the last few years; the secretion of hydrochloric acid especially has been much studied, and consequently its relation to diseases of the stomach. The following facts, as being of importance for diagnosis, may be mentioned.

Immermann<sup>1</sup> and Schetty<sup>2</sup> found no alteration in the secretion of the gastric hydrochloric acid in tuberculosis. Similar observations were made by Chelmonski,<sup>3</sup> Klemperer,<sup>4</sup> O. Brieger,<sup>5</sup> Hildebrand,<sup>6</sup> and Schwalbe.<sup>7</sup> Grusdew<sup>8</sup> found diminution of the acid. The statements of Hüfler<sup>9</sup> that free hydrochloric acid is absent in heart-disease were not confirmed by Einhorn,<sup>10</sup> Adler and Stern.<sup>11</sup>

Biernacki<sup>12</sup> frequently found in kidney-diseases a considerable diminution in the secretion of hydrochloric acid, and his statements agree with observations which I made.<sup>13</sup> Lenhartz<sup>14</sup> has collected much material bearing on this point. In acute and chronic dyspepsias free hydrochloric acid was very frequently totally absent, in chlorosis it was absent in forty-five per cent. of the cases, and in ulcer of the stomach the proportion was variable.

It follows from all these observations that the absence or presence of free hydrochloric acid is a symptom which admits of a great many explanations and which can only be used diagnostically if all collateral points are carefully considered. It would be very desirable to repeat these experiments quantitatively with reliable methods and with the consideration of all the safeguards here mentioned. Then most probably will be obtained simple relations between the quantities of hydrochloric acid found in gastric and general diseases. At present so much only can be stated, the constant absence of hydrochloric acid and the constant presence of hypersecretion of hydrochloric acid are important diagnostic aids.

<sup>1</sup> Immermann, Bericht des Congresses für innere Medicin, 1889, viii. 219.

<sup>2</sup> Schetty, Deutsches Archiv f. Klin. Med., 1890, xlv. 219.

<sup>3</sup> Chelmonski, Schmidt's Jahrbücher, 1890, cxxvi. 134 (Referat).

<sup>4</sup> Klemperer, Berliner Klin. Wochenschr., 1889, xxvi. 11.

<sup>5</sup> O. Brieger, Deutsche Med. Wochenschr., 1883, xv. 14.

<sup>6</sup> Hildebrand, Deutsche Med. Wochenschr., 1889, xv. 15.

<sup>7</sup> Schwalbe, Virchow's Archiv, 1889, cxvii. 316.

<sup>8</sup> Grusdew, Centralbl. f. Klin. Med., 1890, xi. 92 (Referat).

<sup>9</sup> Hüfler, Münchener Med. Wochenschr., 1889, xxxvi. 561.

<sup>10</sup> Einhorn, Berliner Klin. Wochenschr., 1889, xxvi. 1042.

<sup>11</sup> Adler und Stern, Berliner Klin. Wochenschr., 1889, xxvi. 1063.

<sup>12</sup> Biernacki, Centralbl. f. Klin. Med., 1889, xi. 265.

<sup>13</sup> R. v. Jaksch, Realencyclopädie der gesammten Heilkunde, 1890, xxii. 90.

<sup>14</sup> Lenhartz, Schmidt's Jahrbücher, 1890, cxxv. 277, und Deutsche Med. Wochenschr., 1890, Nr. 6 u. 7.

*ON THE NON-CONTAGIOUSNESS OF LEPROSY.<sup>1</sup>*

BY L. DUNCAN BULKLEY, A.M., M.D.,

Professor of Dermatology and Syphilis, Post-Graduate Medical School, New York, etc.

FIFTY years ago such a topic as the above would hardly have been seriously considered by any large body of intelligent medical men, because the almost universal opinion expressed would have been that leprosy was virulently contagious. This was accepted as a fact handed down from ancient times, and received without question, as have been many errors in medical and other sciences. It is in the light of advancing science, with the aid of careful medical observation and widely-extended medical research, that some measure of light has dawned upon the possible cause or causes of the disease, and that much of the obscurity and terror which formerly surrounded the name of "leprosy" have passed away.

We need not look further than the Bible accounts of what is there denominated "leprosy" to understand the reasons of the loathing and fear attached to the name. Pictures there drawn of the leper crying "Unclean, unclean!" are so vivid that one almost shudders at the image which is brought to the mind thereby, and both in the Old Testament and the New we find so much to indicate, beyond question, the contagious nature of what is there denominated "leprosy," that this aspect of the disease is accepted by the average reader without question. The same is true of the delineations representing leprosy in writings of the early and middle ages, and the leper in a white or a gray robe, with a bell or a clapper to warn off those approaching, was a frequent sight throughout Europe, even until comparatively recent times. Even up to the present date novelists and other writers speak in such terms of the disease as to excite the horror and fear of their readers. It may, therefore, be asserted that to-day, except when otherwise specially educated or informed, the presence of the leper in any community will excite far more fear of danger of infection than would that of a patient suffering from diphtheria, small-pox, or syphilis.

Not only will we find this actively contagious aspect of leprosy indicated and maintained in religious and secular writings, but, if we consult the works of reference in medicine and surgery bearing on the subject, we will, almost without exception, until quite recent times, find the opinion expressed or inferred that the disease is highly contagious; and, as far as I have been able to ascertain, the ordinary opinion of many general practitioners bears out the same view.

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<sup>1</sup> Read before the New York County Medical Association, December 21, 1891.



But, with the progress of science, aided by closer observation and study, other views are found to prevail, and gradually the amount of evidence in regard to the non-contagiousness of the disease has been increasing to such a degree and to such a proportion that it cannot longer be ignored, and the matter deserves a most careful and serious consideration.

The subject is so large a one, and the mass of evidence for and against the contagiousness of the disease is so great, that we cannot hope to compass all within the short space of a single article before a society. I will endeavor, however, briefly to present such facts as have come to my notice, hoping that thereby some clear light may be thrown on the subject, or, at least, that those present may become better acquainted with the true aspect of the question.

The reasons for the very general acceptance of the great contagiousness of leprosy may be traced, I think, wholly to three general causes, as follows :

1. The very strong impressions produced upon the minds of every one by the biblical accounts of the disease thus designated, and the subsequent acceptance of this in literature, as already mentioned.

2. The very wide-spread diffusion of the disease, and its increase in various portions of the world with greater or less rapidity at different times.

3. The absence hitherto of any satisfactory explanation for the spread of the disease, except by the way of direct contagion.

1. To understand how little value can be placed upon any judgment formed from the biblical statements concerning a disease which is there called "leprosy," it is to be remembered that there are at the present time upon the list of recognized diseases or morbid conditions of the skin not less than one hundred different designations in complete text-books on the subject, and that in the ordinary course of practice in any dispensary or clinic there will be registered at least fifty different diseased conditions of the skin during the course of a single year, and of these at least twenty or thirty are of a relatively frequent occurrence. These are all separated one from the other, and no one acquainted with the subject would ever mistake them or apply the same name to them all. But when we look into the Bible we shall find, as might be expected, that there is no great distinction made in regard to diseases of the skin, as, indeed, there are no fine distinctions with regard to matters relating to other sciences ; nor does it pretend to be a guide in matters other than religious. Here almost the only diseased condition relating to the skin is that which is there designated as "leprosy." If we analyze the accounts given, however, we shall find that no less than five, or perhaps six, distinct and different diseases, which we can recognize without very great difficulty, are there described under that term.

It is not at all easy to learn from the thirteenth and fourteenth chapters of Leviticus, and other places where leprosy is mentioned, exactly what is intended by the various descriptions given ; but it is absolutely certain that

not all that is there stated can refer to what is now known as true leprosy. We there find suggestions which point to psoriasis, eczema, scabies, morphea, leucoderma, syphilis, and probably other affections. A very strong argument that all descriptions do not refer to true leprosy, as we now know it, is found in the Bible itself. In it we find accounts of the rapid development of the malady while under the priests' observation, and then, again, repeated statements that persons having such and such symptoms would be considered after all not to have had leprosy; while certain other individuals, who were first declared to have had leprosy, are afterwards declared to have been cured. Now, as far as we know, this would be an impossibility with true leprosy; for little, if any, change takes place in the disease, either in a short time or when the patient remains under the same circumstances as heretofore, and even to the present time little or nothing has been learned with regard to the actual cure of the disease.

It must, therefore, be granted that, from the confused idea given in the Bible in regard to skin-diseases in general, which were all classed as leprosy, and from the natural ignorance of the priesthood in regard to purely medical matters,—they being the ones to whom the cases of disease were referred,—it must be granted, I say, that no satisfactory idea in regard to the true nature of leprosy or its contagiousness can be obtained from this source; for the evident contagiousness of certain diseases, such as scabies and syphilis, is continually mistaken for—or, rather, included in—the contagiousness of leprosy, as representing the great class of skin-diseases. So that, as a scientific basis for the support of the contagiousness of leprosy, we must entirely exclude the biblical account.

Nor can we place any more credence upon the statements regarding the disease found in very early and mediæval literature, for medicine had then made absolutely no progress, and there was also no distinction then made of the various forms of skin-diseases. Unfortunately, the error has been continued by late writers, even up to the present time, and the vivid descriptions given in “Ben-Hur” stand as a striking illustration of a warped judgment working without the light of modern science. Nowhere to-day could any one find the slightest basis for such descriptions as are there given, even in the countries where leprosy prevails to the greatest extent.

2. The very wide-spread diffusion of true leprosy at the present time, and its vast increase, often with much rapidity in certain sections, does seem to lend a support to the view of its active contagiousness.

But, on the other hand, when this subject is studied more closely, it will be seen that there is no cause whatever to apply the term “contagious” to it for this reason, any more than for others; for leprosy is not more wide-spread than malaria, nor when it has gained access does it sweep through the country with anything like the rapidity with which the malarial poisoning affects those who come under its influence, nor, indeed, do the numbers affected bear any proportion the one to the other. Cancer and sarcoma are also very wide-spread affections, but there is no suspicion that they are pro-



duced by contagion; indeed, if we consider the history of the spread of leprosy in any one country, the relatively slow method in which it spreads as compared with actively contagious diseases, such as cholera, small-pox, yellow fever, etc., and the relatively small number of people who are ultimately attacked, it is readily seen that but little argument can be drawn therefrom in regard to the contagiousness of the disease.

As leprosy resembles syphilis in its general character and its manifestations, the thought naturally arises that the element of causation of the two is very nearly alike, and that the slow spread of leprosy would be accounted for in the same manner as the slow spread of syphilis. But, on the other hand, if one looks at certain epidemics of syphilis, where the disease has been introduced on an entirely virgin soil and in an ignorant community, where no precautions are exercised, one will see how vastly different is the nature and mode of action of the two diseases. Thus, at Rivalta and Capistrello, in Italy, Hakola, in Finland, Middelburg, in Holland, and other places, syphilis has entered small country communities, and in a very short space of time has involved almost the entire population, with a rapidity which can in no wise be compared with the mode in which leprosy spreads; so that if the latter, which is a chronic disease, spreads from anything like general contagion, it would certainly increase far more rapidly, more as syphilis has, and not in the manner in which we find it actually occurring.

If, therefore, we study attentively the accounts of the increase of leprosy, as it is now recognized, in any portion of the world, it will be seen that it does not correspond with the progress of any disease which we are accustomed to recognize as contagious. On the contrary, as will be seen later, in countries where the disease is not an epidemic, there is really absolutely no tendency for it to spread, however intimate or close may be the relations or contact between those infected with true leprosy and those around them.

Thus, we have this definite statement of many in England, that a very considerable number of individuals with leprosy return to that country from the Provinces each year, some of them entering the hospitals, while others mingle freely in private life; and English observers are positive that no single case of the communication of the disease has ever occurred there.

In this country leprosy is not so very uncommon, and it can be safely stated that every hospital in the city has, at one time or another, had cases under treatment in its beds. Personally, I have seen cases of true leprosy in consultation, in a number of our hospitals, and at the Skin and Cancer Hospital we had a severely-affected patient for over a year. When *interne* in the New York Hospital I had under observation, for a number of months, a most severe case of mutilating leprosy, in which the fingers were largely gone, and the face and other parts of the body greatly ulcerated. There was also a great destruction about the right foot, with much discharge and loss of bone from time to time. All parts were freely handled, without the exercise of any precautions. He was afterwards transferred to and remained

for quite a while in the surgical ward, where the foot was amputated. This was over twenty years ago, and no cases arose therefrom by contagion.

I am informed by Dr. George T. Elliot that when he was house physician of the New Orleans General Hospital there were half a dozen or more lepers in the wards with the other patients, and that there was no thought of any contagion whatever.

The surgeon of the Madrid General Hospital states that he has had a number of lepers in the wards of his hospital during his twenty-five years of service, and has never had any reason to suspect the contagiousness of the same.

In a recent visit to the so-called Leper Hospital at San Remo, Dr. Duhring found that it was only a ward in a general poor-house hospital, and that, although the patients had intermingled with the lepers for many years, there had never been an instance of any one contracting leprosy.

In the Paris hospitals there are always a number of lepers who mingle freely with the other patients, without any thought of contagion; Dr. Besnier recently stated that there were a hundred cases of the disease in Paris, and there were at the time eight cases in the Hôpital St. Louis.

In Dr. Unna's hospital, in Hamburg, there were when I was there a number of lepers, some of whom had been there a considerable length of time; these mingled freely with the others, and one little boy who was affected played continually with other children.

Similar statements might be made with regard to all the hospitals of Europe, in many of which I have personally seen cases of leprosy from time to time, and, as far as I have been able to learn from every possible source, there has never been an authentic instance of contagion from the disease.

At the New York Dermatological Society, meeting at the houses of the different members, we have from time to time had a very considerable number of cases of leprosy presented, which were always freely handled, without the slightest thought of contagion.

When it comes to the matter of leprosy occurring in other countries,—that is, in those in which it is indigenous and endemic,—the evidence in regard to its contagiousness or non-contagiousness is naturally very much more difficult to obtain; for here we must remember that we are in the place where it might be said to develop naturally,—that is, where there are causes which determine its increase, which do not seem to exist in some other lands. It is, therefore, extremely difficult to say, when the disease appears in one or another person, whether or not it has been acquired by contact with some previous case. But, on the other hand, the more this matter is studied in the light of modern scientific investigation, the more clear does it appear that the disease is not contracted, even in those countries, by direct contagion with an individual affected, but arises in some other way, to be referred to more fully later on.

The time has passed for the acceptance of any mere opinion or dictum



with regard to the contagion of such a disease as leprosy, but we may learn much from the statements which come to us now and again from all portions of the world where leprosy exists, with regard to the absence of any direct evidence in this direction.

Thus, perhaps no better authority is known than Dr. Beaven Rake, medical superintendent of the leper hospital in Trinidad, where he has been for many years. In reply to the questions addressed him by the National Leprosy Fund Commission, he says:<sup>1</sup>

“The well-known case of Father Damien has been very generally accepted as tending to prove contagion. To my mind it is very far from conclusive. We know that he lived in a leper colony for a number of years and then developed leprosy. He may, however, have absorbed the specific virus (now generally believed to be the *bacillus lepræ*) in many other ways, —*e.g.*, in food, water, air, etc.

“The Trinidad Leper Asylum has been nursed by Dominican nuns since 1868. These sisters are in daily contact with the patients, washing their sores, applying poultices, and bandaging their crippled limbs; yet no sister nor any of the other attendants has yet developed the disease; the dispenser, who is also a Dominican sister, has lived in the asylum since 1868, having been absent during all this time for only eight days. She is still active and in good health.

“In this colony I have not as yet come across any histories of contagion in examining patients, and what evidence I have obtained has pointed to the reverse.”

We constantly have also from those who have to do with leprosy at the present time assertions bearing out the idea that the disease is not contagious in the ordinary sense of the term. Thus, Dr. Van Allen, from South India, states<sup>2</sup> that, “In the leper hospital in Madras, India, there are somewhat over one hundred and fifty lepers. Most of these are in a condition to require daily dressing of their ulcers. Three persons are so employed for this purpose. The dressers use the naked hands in doing this work, handling and rubbing the ulcers most intimately. One dresser has been employed in this work for twelve years, another ten years, and another five years. None of them have contracted the disease. This leper hospital has been founded about fifty years. During that time a large number of persons have been employed about the grounds and in the buildings, as gardeners, general masters, apothecaries, etc., and there is, so far as known, only one case in which a perfectly healthy man, with a family history free from leprosy, became affected with the disease.”

It is to be remembered that the subject of the contagiousness of leprosy was very fully investigated twenty-five years ago, or thereabouts, by the

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<sup>1</sup> Journal of the Leprosy Investigation Committee, No. 1, August, 1890, pp. 48, 49.

<sup>2</sup> New York Medical Record, November 7, 1891, p. 568.

Leprosy Committee of the Royal College of Physicians, of London, and that the view arrived at, after a very large correspondence with all portions of the world, was decidedly against the contagious nature of the complaint in question. Thus, we may quote their statement:<sup>1</sup> "The all but unanimous conviction of the most experienced observers in different parts of the world is quite opposed to the belief that leprosy is contagious or communicable by proximity or contact with the diseased. The evidence derived from the experience of the attendants in leper asylums is especially conclusive upon this point. The few instances that have been reported in the contrary sense either arise on imperfect observation, or they are recorded with so little attention to the necessary details as not to affect the above conclusion."

I am aware that numbers of persons well posted on the subject throughout the world have, time and time again, expressed their strong belief in the contagiousness of the disease, and of late the Leprosy Investigation Committee, of London, has drawn out many expressions in the same direction. But, as far as I have been able to ascertain, these are simply expressions of opinion, naturally from large experience, but without being in any way supported by direct facts.

I am likewise well aware that negative facts of non-contagion do not carry the same weight as those of a positive character, but surely such statements as have been alluded to, with regard to the escape of many healthy persons around lepers, even in infected countries, must have their weight in determining the contagiousness of the disease. Further evidence of this is found in the failure of the repeated attempts which have been made in Norway, Italy, China, and elsewhere to inoculate the disease artificially. In the Sandwich Islands, as is well known, a convict who was thus inoculated developed the disease after a number of years; but such a case does not by any means prove the contagiousness of the disease, inasmuch as the man was continually under the influences which were producing leprosy in many all about him, and, moreover, two of his relatives were afterwards found to have the disease.

Let us sincerely hope that in the future all cases where there is any foundation for the belief that leprosy was communicated by contagion shall be most accurately observed and fully noted and reported.

3. The absence of any satisfactory explanation hitherto for the spread of the disease, except by way of contagion, has always seemed to favor this method of propagation. When a disease has increased in a community, it has always seemed very natural to suppose that it was transferred from one person to another, because this mode of development has long been known to be very certainly the case with regard to a certain number of affections. Acute eruptive diseases, small-pox, scarlet fever, and measles have always spread with fearful rapidity and certainty wherever they have been introduced for the first time into a community, and cholera, yellow fever, diph-

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<sup>1</sup> Report on Leprosy, by the Royal College of Physicians, London, 1867.



theria, and other affections have been constantly traced from one person to others. And then, the great disease syphilis can almost invariably be traced to a preceding case, so that it is the most natural thing possible to think that leprosy, which in many of its features resembles the latter disease, should be so caused.

In looking over the possible causes for leprosy, there seems, at first sight, to be hardly any other one feature than contagion, common to the disease in the various countries where it has developed; for, as we know, leprosy is found not only in the hottest portions of the earth, but also in the very cold regions, such as Norway and Greenland. It exists where malaria is abundant, and again, where there is none. It is found on the sea-shore and far inland. It attacks those with dark skins as well as those who are light complexioned. It spares neither race, sex, nor quality, and, as remarked before, there seems to be very little in common between the causes of the disease in various countries. This absence of any apparent reason why it should develop, except from contagion, has always been a strong *prima facie* evidence that such has been its origin.

But it may be stated that no systematic or determined effort has ever been put forth to discover the real cause and mode of propagation of leprosy, until quite recently; the various suggestions which have been made by single observers, from time to time, have never stated the conditions surrounding the disease. It is not very many years since scurvy was thought to be a contagious disease, and its appearance in a large number of persons on board ship, or among a garrison, would be taken as an evidence of its being contracted the one from the other, so that this disease and typhus fever would be placed upon the same footing; whereas, it is now absolutely determined that the former is simply a dietary affair, while the latter is an infectious disease. The development of gout in a number of members of a family or community would not now suggest to us anything of contagion, but tuberculosis, which formerly was not recognized as a contagious affection, is now proved, beyond doubt, to have such an origin in many instances.

Trichinosis, when attacking a large number of persons in a community, would easily give the idea of a contagious disease, and it is only within the memory of those present that its true parasitic nature is known; other illustrations could also be given.

Leprosy and syphilis have long been classed together, and many essays have been written to show the connection between the two, and, at least, one large book has been written, which speaks of syphilis as "the daughter," and, again, "the mother of leprosy"; but modern science has entirely demonstrated the perfect individuality of the two, and separated them entirely, the one from the other.

The mystery surrounding the infection of syphilis has long ago passed away, and the rules of its spreading are now as well known as those of any other disease, if, indeed, not better. It is hoped and expected that leprosy

will be studied with the same earnestness and intelligence which has been applied to this disease.

Such, then, are some of the facts and arguments with which the light of modern science sweeps away the rubbish of sentiment and tradition which has gathered around the name "leprosy."

Let us now consider briefly what points in regard to the communicability of true leprosy, as we now know it, have been developed and more or less proved. It is not necessary here to describe the disease, or to enter into any extended statements regarding it. It is sufficient to state that we have reference in our discussion to what is known throughout the scientific world as true leprosy, including its anæsthetic and tubercular forms, as fully described and depicted by modern writers, and as seen now and again in this country.

Undoubtedly the greatest advance which has been made towards the elucidation of the nature and spread of the disease is found in the discovery of a bacillus, the first suggestion of which was made by Hansen, in Bergen, Norway, in 1869, but which was most clearly depicted by Neisser, in 1879. These bacilli have been found to present similar characters in the tissue taken from cases from Norway, Spain, Guiana, East Indies, Roumania, Brazil, and Palestine. In every portion and organ of the body they are the same, and occur with varying abundance, as I have had opportunity to study them myself in the laboratory of Dr. Unna, in Hamburg. These organisms may unquestionably be taken as the essential feature of leprosy; and, from what has been studied of them thus far, it may be stated that they exist in every case of the disease. What, however, their actual bearing upon the nature and etiology of the disease is, has not, as yet, been determined; whether they are the producers or the product is not known, except by analogy from other diseases in which similar organisms occur. Experimenters have not yet succeeded in securing pure cultures of them, as it is stated that they grow with exceeding great difficulty outside of the human body; and, consequently, no inoculation with them, as pure cultures, has ever been made, as in the case of other similar bodies found in other diseases, and, therefore, no absolute proof of their etiological importance exists. This may, however, all possibly depend simply on a failure in technique, which has not thus far arrived at the desired end. It is quite possible that as much can ultimately be accomplished with the bacillus of leprosy as with the micro-organisms of other diseases.

The bacillus, then, being the accepted fact in leprosy, how does it affect the question of the nature of the disease, and its spread throughout the world?

The various etiological features which have been named for leprosy may be included under (1) race, (2) climate, (3) soil, (4) hygiene, (5) diet, (6) heredity, (7) contagion (or, as it should rather be put, communicability from one person to another in any manner).



We have already seen that race, climate, and soil have no relation to the disease, for it occurs under the most varied conditions, in the most different portions of the earth.

Bad hygiene has been ascribed by some as the cause of the disease; but, while cases improve greatly when their hygienic surroundings are improved, there has been no evidence that unsanitary surroundings have anything to do with the production of the malady, although it may contribute to its propagation by means of the facilities afforded for the transference of the poison from one person to another.

Heredity was at one time credited, especially in Norway, with being the main method by means of which the disease was continued and propagated, and more recently Hillis,<sup>1</sup> in his excellent work, has sustained the view that this may be taken as a recognized factor. But, in connection with this, it must be recognized that the number of instances where children escape the hereditary influence is very great; a striking one has recently been reported from Venezuela. Two lepers in the asylum at Maricaibo bore two children, neither of whom showed any symptoms of the malady, and finally one of them, at fourteen years of age, was pronounced free of the disease by a board of experts and allowed to return to society. Lepers migrated to non-infected regions, as, for instance, those who have come to the United States, commonly bear healthy children, as has been shown in reference to a very large number from Norway who have settled in Minnesota. It is also well proved that heredity does not account for any share of the existent cases, for thousands of instances are observed where the disease appears in those in whose family the disease has never before occurred.

This narrows the discussion of the subject down to the two factors of diet and the communicability of the disease.

Before considering more fully the modes by means of which it has appeared probable that the disease has been at times spread from one person to another, and the circumstances attending the same, we must as briefly as possible present the subject of diet, which has long been considered an efficient agent in the production of leprosy.

Many hypotheses have been put forth from time to time, some of them dating back for hundreds of years, asserting the disease to be from one and another form of diet, at one time vegetable, and at another, animal; but it is a little curious to note that in very many, if not in almost all, of these the subject of fish is mentioned as one of the articles of diet which was always suspected, especially when it was eaten in an uncooked or putrid state; this article, therefore, is alone worthy of serious consideration.

It is well known that Mr. Jonathan Hutchinson, of London, has for a long time been a most earnest advocate of the fish hypothesis of the production and propagation of leprosy, and has presented the subject most ably and forcibly on many occasions; it is difficult, indeed, not to be quite

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<sup>1</sup> Hillis, *Leprosy in British Guiana*, London, 1881, p. 167.

persuaded by the force of his facts and reasoning. In order to present the matter in the strongest light, I will take the liberty of quoting some of his words in the "Journal of the Leprosy Investigating Committee," No. 1, p. 78 :

"No other article of food can be mentioned which is in use in all leprosy districts. The natives of Norway eat little or no rice, and the English of the Middle Ages ate none. Pork is carefully avoided by the Jews, who yet suffer, whilst, on the other hand, it is taken freely in thousands of places where leprosy is unknown. If we incline to suspect decomposing cheese, or other milk products, we are at once met by the fact that these are taken freely by inland communities who never suffer from leprosy. No kind of vegetable can be mentioned which is common to all leprosy districts and to them exclusively.

"When we come to fish, however, the facts at once change their face. Most of the places where leprosy is largely prevalent are on the sea-coast. In temperate climates it never now goes far inland. It is especially common in islands. Wherever a community is to be found which subsists largely on fish, there leprosy is present. Almost all large fish-curing locations are the homes of leprosy, and it is often met with also in the countries to which their products are most freely exported.

"In temperate climates it would seem probable that sound fish, properly cured or cooked, is wholly devoid of risk. . . . Fish taken out of warm waters, and in countries where decomposition sets in easily, is probably far more dangerous than that obtained in cold or temperate regions. It may also be very legitimate to entertain the suspicion that all kinds of preserved fish, whether salted or otherwise, and all kinds of raw fish, are more dangerous than fresh fish which has been thoroughly cooked. . . .

"In recording the denial on the part of leprosy patients that they have been fish consumers, caution must be exercised. Those who belong to castes who are forbidden to eat animal food will naturally be prone to deny that they have deviated from the rule. The temptation to eat fish as a condiment must, in the case of those restricted to an exclusively vegetable diet, be very great. It is under those circumstances, precisely, those who eat most seldom (dwellers far inland, for instance) who are likely to receive it in its most dangerous state of decomposition. It must be remembered that members of castes forbidden to take life, often eagerly avail themselves of all opportunities as regards what has been found dead or killed by others. The bare statement that leprosy prevails in classes who, from religious scruples, never eat animal food, is usually of no real value. Careful and even sceptical inquiry must be made as to whether the individual lepers had really, in the case of preserved fish, invariably abstained. . . .

"The fish hypothesis by no means presupposes that large quantities of fish are eaten. It is possible that very small quantities may be efficient, even a single fragment, if containing the bacillus. It is supposed that the introduction of the bacillus into the stomach in association with fish, is the first and necessary step; it may still be the fact that the development of the parasite is further favored by a diet of fish. Thus, the greatest severity and rapidity of the disease in countries where it is endemic, and the fewness of recoveries there, may be explained."

I feel that I have but imperfectly presented Mr. Hutchinson's arguments by the above quotations, but cannot dwell longer on the matter. He is well known as a most careful and astute observer and student, and those who are interested in the subject should read further what he has written on the subject, for much of it is very conclusive.



The fish hypothesis has never been investigated as scientifically as perhaps it deserves, for a theory with such an array of facts and arguments as have been presented by so illustrious a man as Mr. Hutchinson, should be either confirmed or refuted, if possible. The work is an arduous one, no doubt, to search for the bacillus in the many kinds of fish which are used for food, and, if found, to cultivate and inoculate with the same, and as yet I know of no efficient work in this direction. Danielssen and Boeck<sup>1</sup> examined suspected fish some years ago, and thought they found evidence of a disease corresponding to leprosy, but further investigation revealed that the excrescences were due to vegetable parasites. This is mentioned because the work was done over forty years ago, and to show that the fish theory, which dates back to Avicenna and is found all through literature, received support from these justly celebrated students of leprosy. Careful and extended studies, with all the light of modern bacteriology, may at some time discover that, after all, there is a sound basis for the theory, and thus solve another of the great problems of medicine.

The occurrence of sporadic cases of leprosy, it seems to me, can be better explained by means of a food hypothesis than by that of any acquiring of the disease from another person. Salted or dried fish, which is even here sometimes eaten raw, might convey the infection, and *caviare*, made from the roe of several varieties of fish imported from Russia, is always eaten uncooked.

Among the twenty or thirty cases of leprosy which I have seen in this country, there have been two which, undoubtedly, originated here, the patients having never been outside of the United States, nor, indeed, more than a few hundred miles from New York; they had not in any manner been exposed with any one who had leprosy.

The first of these cases was first under the care of my father, the late Dr. H. D. Bulkley, and was by him shown to the New York Dermatological Society, when the elder Boeck, of Norway, was present, who confirmed the diagnosis absolutely. The patient was a strong, well-developed man, aged thirty-seven and a half years, who was born in Connecticut, and who had always lived there or in New Jersey, or in New York. He had had symptoms of the disease eight or nine years before coming under treatment, then with much tuberosc disfigurement of the face, and during the five years while under observation the disease progressed slowly, with ulceration in many places.

The other case was of the anæsthetic and macular leprosy, in a young man of thirty, who had always lived in the neighborhood of New York City, and who had never in any way had any relations with any one affected with leprosy.

One other case was in a young gentleman, aged twenty-one, with mixed anæsthetic and tubercular leprosy; he was born in New Orleans, of German

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<sup>1</sup> Danielssen and Boeck, *Traité de la Spedalsked*, Paris, 1848, p. 342, quoted by Bergmann, *Samml. Klin. Vorträge*, Leipsic, 1891, No. 33, p. 214.

parentage, and had never lived out of Louisiana or Texas until he came North. I find it recorded that none of his physicians, relatives, or friends had ever been able to trace any possible source of infection.

I am not here to defend the fish hypothesis, but I cannot help thinking that such sporadic cases could be explained quite as well (if not better) by the theory that the *materies morbi* entered the system by the way of food, as by the supposition that they acquired infection from some previously infected person; when it is remembered that the first two, at least, had never been far away from New York, and had certainly never had any direct or indirect relations with lepers.

We may now briefly consider some of the possible modes of the communication of the disease, which have been advocated more or less forcibly at different times.

The greatest obstacle to understanding the communicability of leprosy lies in our very incomplete knowledge in regard to the very first beginnings of the disease, or the mode of its entry into the system. Many years ago the world was in the same position in regard to syphilis; but now there are few diseases whose natural history is better known, and none about whose inception and modes of transmission we are more certain; the primary lesion, or point of entry of the disease, can be determined to a certainty in a very large proportion of the cases,—indeed, it may be said that it could always be determined in every case if all the facts were known and the case watched from the beginning.

But in leprosy matters are quite different, and, as far as I know, no one has ever attempted to demonstrate any primary lesion in leprosy, or to point out clearly when and where the infectious material has entered the system; certainly there are no established facts regarding the same.

The only suggestion I can find relating to the matter is one recently made to the present Leprosy Investigation Committee, by Dr. H. W. Blanc,<sup>1</sup> of New Orleans, a former house physician of the New York Skin and Cancer Hospital; allow me to quote briefly from his communication:

“If leprosy may be introduced through the integument, then the initial lesion must be an ill-defined erythematous spot, which is soon followed by other macules (erythematous) in the vicinity, or on any other parts of the body. At least this is the sort of history I have received from a number of patients, and which I have been able to witness in one case, which occurred in the person of an English-born nurse, already referred to in this report, who had charge for several months of a severe case of leprosy in the ward of which he was nurse. The first lesions appeared one week after a cut from a razor while shaving himself in the ward. This man had lepra maculo-anæsthetica, and his case aborted in a year after he had taken large quantities of chaulmoogra oil, and painted every macule with a solution of pyrogallol.

“As far as my observation extends, then, it is in a condition of erythema that leprosy first manifests itself externally, and one which is particularly interesting when we compare it with a local disease, which, if the views here expressed be correct, is

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<sup>1</sup> Journal of the Leprosy Investigation Committee, London, No. 2, p. 100.



very clearly related to leprosy etiologically. I refer to the affection known as 'erysipeloid.'

"According to Rosenbach 'erysipeloid is a disease due to a wound infection with foul animal matter. It is particularly found on butchers, dealers in fish, cooks, tanners, etc., and as a consequence is usually observed upon the hands. The affection begins with some degree of itching, as a red spot that gradually advances over the surface, but as it extends peripherally, the central portion undergoes involution, and in this way rings and half circles are produced. The lesion is but slightly elevated, although clearly defined against the healthy skin. The surface over which the disease-process has marched is left apparently normal, and shows no desquamation or other secondary effects. Erysipeloid is without systematic reaction, and tends to spontaneous recovery in one or two weeks.'

"The lesions here described exactly correspond to the early lesions of leprosy so far as the appearance of the patch is concerned, even to their annulate configuration, and to illustrate still further the similarity between these two diseases together with the main point of difference, it may be said that erysipeloid is to the early lesions of lepra what chancroid is to chancre. The two former, like the two latter lesions, are contracted under similar conditions, but they eventuate differently according to the presence or absence of a specific poison capable of producing a constitutional disease."

If there is any value in this suggestion of Dr. Blanc, then, possibly we may be on the verge of discovering the true nature and mode of production of leprosy; micro-organisms are known to be the cause of decomposition, and, in addition to "*erysipeloid*," we know of a local, chronic affection, the *tuberculosis cutis verrucosa*, due to the infection of the skin by the tubercle-bacillus. A number of other germs are also known to produce acute disease in man, such as anthrax, glanders, septicæmia, etc., while we have also general tuberculosis, as an instance where bacilli induce a chronic systemic disease, in so far similar to leprosy. Somewhat the same has been claimed for syphilis, but cannot be regarded as fully demonstrated.

Little, if anything, is known in regard to the incubation of leprosy, which is also a great obstacle to our understanding its nature and mode of propagation. While some observers have stated that the incubative period may be very brief and that cases occur a few months after infection, the majority of writers place the interval at between four and five years, while others, as Danielssen and Boeck, declare that ten or fifteen years may elapse before the disease shows itself. It is thus seen how exceedingly difficult it must be to trace any infection; for, during this period, the individual may have been submitted to many influences which may have etiological importance, and any assertions of the patient in regard to exposure must be taken with the greatest caution.

During these years of incubation, if such is the fact, there are usually no symptoms to indicate the presence of the disease; there is certainly no marked primary lesion, such as in syphilis, nor are there any early and transitory eruptive or other phenomena to show that infection has taken place; we only know that the disease develops very slowly, either with anæsthetic disturbances or with tubercular lesions, or with both. But

Leloir has recently claimed<sup>1</sup> that he has made out prodromal symptoms in a number of patients. I will mention the features which he has pointed out : 1, fever ; 2, debility ; 3, somnolence ; 4, digestive troubles ; 5, oppression ; 6, dryness of the nose and epistaxis ; 7, head-disturbances and vertigo ; 8, increase or diminution of sweat ; 9, anomalies of the secretion of the pilosebaceous glands ; 10, pruritus or hyperæsthesia cutis ; 11, neuralgic pains ; 12, pemphigus ; 13, dorsal and other rheumatic pains ; 14, anæmia ; and 15, menstrual disturbances. It is readily seen from this list that the very early recognition of leprosy would be no easy task, if, indeed, these symptoms could ever be traced directly to the incubative period of the disease in question.

If it be granted, as many believe, that leprosy is due to and caused by the presence of the bacillus, it follows almost certainly that to a certain degree it is infectious, when once it has developed in man, *provided that all the conditions for its transmission are fulfilled*. But all who are at all acquainted with syphilis, and with the history of the development of leprosy, know how widely different are the two, as far as regards their power of infection. Either the germs of the latter have but little power of continuance and reproduction when transplanted in a new soil, or the soil is seldom in a condition to receive and support them, or the conditions for the transference of the microbe are seldom all fulfilled in common life ; for, certain it is, from what has preceded, that the disease spreads only under peculiar and very favorable circumstances, and that not by any means in every portion of the world.

We will now mention the modes by which it has been said to be transferred from one person to another.

*First.* It is thought that the disease is communicated mainly by means of discharges from ulcerating surfaces. But that this is not always or only the case is seen in those regions where chiefly anæsthetic leprosy exists and spreads, unattended with ulcerations ; and further, negative evidence in regard to the certainty of this is shown by multitudes of instances, some of which have been mentioned, where attendants have for years cared freely for such patients without receiving infection. There is still, however, reliable evidence that such infection may and does occasionally take place.

*Second.* It is claimed that intimate sexual relations are the means of spreading the disease, and many reliable observers have reported the disease thus acquired. But opposed to this, as a certainty, are the multitudes of instances on record where healthy husbands or wives have lived with those affected with leprosy for very many years, without ever acquiring the disease and have even borne healthy children. There is, however, reliable evidence that infection has apparently taken place in this manner.

*Third.* Vaccination has been charged by many as a cause of spreading the disease. But against this there is very much negative evidence, where

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<sup>1</sup> Leloir, *Traité prat. et theor. de la Lèpre*, Paris, 1885, pp. 12-21.



vaccination from leprous patients has not been followed by this result, in many series of cases. It is still, however, very probable that the bacilli have been thus transferred in certain instances, even as in syphilis, while multitudes have escaped, there have been many unquestioned instances of contamination.

*Fourth.* Insect bites have been charged with the transference of the poison, and this, I believe, was supposed to have been the manner in which Father Damien was infected by mosquitoes; in Norway, it has been believed that the itch insect was the medium of infection. This mode of the propagation of the disease, although possible, has never been at all proved.

*Fifth.* The suggestion has been recently made by Goldschmidt<sup>1</sup> that infection can take place through the sputa, as in tuberculosis, as he had found the *bacilli lepra* in the sputum from a case of ulcerating laryngitis and bronchitis in a leprous patient. This seems to be quite probable, but, as far as I know, rests on this single writer's observation.

These, as far as I can learn, are the only methods of communication of the disease which have been seriously mentioned, and I think our examination of the subject will warrant the statement of Hutchinson, that "if leprosy is contagious at all, it is so in the feeblest manner possible."

In conclusion I may briefly state the results of our study as follows:

1. There is no warrant for the popular terror surrounding the name of "leprosy" as a disease.
2. The disease is not contagious in the ordinary acceptance of the term as applied to such diseases as small-pox, scarlatina, or syphilis.
3. Leprosy is probably due to the presence of a bacillus.
4. There is strong reason to suspect that it may first be introduced into the system by the way of food, and fish is the most likely of all substances to furnish and convey the poison.
5. There is evidence that when acquired, the disease may, under favorable conditions, be transferred from one person to another.
6. Heredity probably accounts for a share of the cases, but the disease is not necessarily transmitted by inheritance.
7. Inoculations with leprous matter may be the means of conveying the disease when all the conditions are favorable.
8. There are far more and greater reasons for the restriction of syphilis and tuberculosis by isolation and segregation than for the necessity of these regulations in regard to leprosy.

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<sup>1</sup> Goldschmidt, *Die Lepra auf Madeira*, Leipsic, 1891, p. 9.

*TREATMENT BEFORE AND AFTER LAPAROTOMY.*

BY ALEXANDER J. C. SKENE, M.D.,

Professor of Gynæcology in the Long Island College Hospital, Brooklyn, New York.

ONE meets not infrequently with urgent cases demanding laparotomy which must be taken as they are and operated upon at once. The majority of cases, however, can be kept under observation long enough to obtain a clear idea of their characteristics. When the diagnosis of the local condition is made, the general state of the patient should be carefully examined into. The advantage accruing from acting on this principle was recently impressed upon my mind in a case of a large fibro-cystoma of the uterus which required removal. While under preparatory treatment the patient's temperature rose to 103.5° F., and there was much pain in the abdomen. Septic peritonitis was suspected, but the temperature came down and again went up, showing that the trouble was a zymotic one, and it yielded promptly to the use of quinine. Had I operated without knowing that she was disposed to this form of fever, I doubt if she would have recovered as promptly as she did.

The state or condition of the nervous system should be investigated, and, if found defective, should be corrected as far as possible. Many patients leave home to be under the care of the special surgeon, and this, together with the dread of the treatment, often deranges the nervous system. All this can be overcome, usually, while other preparatory treatment is instituted. Time should be given for the patient to become accustomed to her surroundings and to gain confidence in the nurse and surgeon. During this time the true state of her nervous system may be ascertained. If she is sleepless and depressed, relief should be given by nerve sedatives and tonics. Quite often the damaged state of the nervous system is due to impaired nutrition, and will be relieved by improving the digestion. Occasionally the nervous trouble is primary, and requires direct attention. Opium in small doses is most reliable in producing sleep and relieving depression, but it deranges digestion and nutrition in some cases, and on that account other remedies should be employed. Sulphonal does remarkably well as a sleep-producer, and is much preferable to bromide, chloral, or any combination of such remedies. It produces the desired result in the great majority of cases that are not kept from sleep by severe pain. This remedy is worthy of note as rather new, and is certainly one that will cause sleep with no other perceptible effect, good or bad.

To those restless, anxious patients who find the days very long even when they sleep at night, and with whom opium does not act well, I have



given large doses of lupulin and small doses of *cannabis indica*. If these do not answer, opium should be tried.

One of the greatest advantages of this preparatory treatment is that the effect of opium on the case in hand can be observed, so that, if it becomes necessary to use it in the after-treatment, the surgeon knows how far to depend upon it and what effects may be expected.

The nutritive system often requires attention, and in the majority of cases nutrition is impaired because of derangement of the digestive organs. In others the general nutrition is good, while the digestive organs alone are at fault.

The time during which the trouble calling for surgical treatment has existed makes the difference in the general condition of the patients.

There are two classes of cases usually met in practice which require attention in regard to digestion and general nutrition: First, those who have not been long under the influence of the affection, and who need very little treatment, except to relieve constipation and perhaps subacute indigestion. Such cases are often left without any preparatory treatment except a cathartic the day before the operation. This may be safe enough, but in the majority of cases the tongue is coated, the bowels sluggish, the appetite variable, and the kidneys act imperfectly. These conditions can all be relieved by a few small doses of the mild chloride of mercury, followed by a saline laxative. If this does not clear the tongue, improve the state of the stomach, and increase the action of the kidneys, the treatment should be repeated in a few days. Second, the more advanced cases, which show general malnutrition as well as an impaired digestion. These require more care and for a longer time. It sounds well to say of such patients that, the cause being one of neoplasm, if this is removed the malnutrition will be cured; but the chance of the patient being able to stand the operation may be improved by overcoming the constitutional derangements as far as that is possible. Gastric sedatives, such as bismuth or cerium, may relieve the irritation and improve the appetite, and tonic laxatives, such as *nux vomica*, *belladonna*, and *rhubarb*, will relieve constipation far better than salines.

To empty the bowels in the best way immediately before the operation is of great importance. The routine dose of castor oil or some other cathartic the day before the operation may or may not answer the purpose. I think that, as a rule, it does about as much harm as good. If a cathartic is called for at all, it should be given two or three days before the operation, so that any intestinal disturbance that it may have caused will have time to subside.

The objects attained in the management of the bowels are threefold: first, to clear out the canal; second, to establish as far as possible normal secretion; and, third, to remove the causes of flatulence, whatever they may be. In the choice of a laxative or cathartic, one should be sought which will meet all these indications. In cases showing deranged secretion,

indicated by the state of the tongue and appetite, an alterative dose of mercury should precede the cathartic, as already suggested. The mercury, being a reliable disinfectant, will also meet another indication, the relief of flatulence. The selection of a cathartic to be given just before the operation is important. Castor oil is the best in case there is constipation or a suspicion of fæcal impaction. The only difficulty is that many patients strongly object to it. When it can be taken, it should be given two nights before the operation. This gives time for the oil to act, and also gives the bowels a chance to become quiet. The rectum should be washed out the night before the operation or early in the morning. To feeble patients who require a cathartic and yet are not strong enough to stand its operation, I give half an ounce of castor oil and two drachms of oil of turpentine. This is a most valuable preparation, if the stomach will retain it. In fact, this is the only cathartic that will act thoroughly in weak, debilitated patients without causing depression. The dose of turpentine is large, but if less is given it will affect the kidneys and fail to some extent as a cathartic. This may be called a tonic or stimulant and cathartic. A similar effect may be obtained by giving six grains of rhubarb, one grain of compound extract of colocynth, one grain of camphor, and a tenth of a grain of extract of belladonna, in pills. There is a little depression following the action of this, and it is not so certain in its action as oil and turpentine.

To those who cannot take either oil or pills without having their stomachs upset I give one or two teaspoonfuls of calcined magnesia and half a teaspoonful of charcoal, followed in a few minutes by a glass of warm lemonade. This empties the bowels and relieves flatulence very thoroughly. This is given in the morning of the day before the operation, the object being to have the bowels quiet and empty at the time of operating.

The condition of the heart and kidneys should be carefully noticed, especially that of the kidneys. The urine should be thoroughly examined before giving an anæsthetic. I am satisfied that disease of the kidneys is the most important of the contra-indications to the use of anæsthetics. If any renal disease is found, it should be carefully treated and watched, and, if it proves to be acute or subacute, sufficient relief can in time be obtained to warrant the operation; but chloroform might be chosen in place of ether as the anæsthetic, and extra efforts should be made to shorten the time of operating. I have for a long time made it a rule always to examine the urine before giving an anæsthetic, and believe that it should be an invariable practice. I refer to that matter here because I have found many who do not think it necessary.

In regard to the state of the heart, I find that it is often deranged in its function from pressure or indigestion, and it nearly always improves under treatment. When there is time, I order muscular exercise as well as remedies to improve nutrition, and find that much improvement in the heart-action follows. Organic heart-disease, other than extreme hypertrophy, dilatation, or aortic stenosis or insufficiency, does not deter me from giving



an anæsthetic and operating. Many cases having disease of the mitral valve take ether very well.

The day and evening before the operating day call for certain attentions. The bath so generally given the night preceding the operation is not always advisable. If the patient is accustomed to daily or frequent bathing it may be safe to give it, but otherwise it is dangerous. The patient may get cold or become exhausted. The bathing should be done, in such cases, several days before, and then with great care. When there is marked debility, with weak heart, digitalis and nux vomica should be given the preceding day; especially is this necessary when the operation promises to be prolonged. I formerly gave quinine, believing that it was a good tonic and helped to prevent shock, but I am satisfied that digitalis and nux vomica are better. The number of doses should depend upon the effect. As soon as the heart-action is noticeably improved the drugs should be withheld.

The food should be of the most nourishing kind and at the same time easily digested, or else it should be artificially digested. Sterilized or peptonized milk, clear soups, tender beef, mutton, eggs, and raw oysters, either or all of these, according to the preference of the patient, may be used.

The time to operate is, as a general rule, midway between the menstrual periods. An exception should be made in cases of menorrhagia and dysmenorrhœa, in which there is an improvement in the strength towards the period of menstruation. Advantage should be taken of that temporary improvement by operating immediately before the menses.

The morning is by far the best time to operate. The patient is then at her best, and the stomach is empty,—a condition very necessary to the taking of an anæsthetic. This would not be referred to here were it not for the fact that a great many surgeons in this country operate late in the day. There are many disadvantages in so doing. The patient suffers from anxious anticipation, and becomes fatigued if food is not given; and if given, it is not, as a rule, either digested or absorbed, and the stomach acts badly during and after the anæsthesia under such circumstances.

There are certain points in the management of the patient during the operation which may be briefly mentioned.

I am led to dwell a moment on the general therapeutics of abdominal section, for the reason that my attention and that of my assistants has been so fully engrossed with the details of antisepsis and the technique of the operation that many important items in the general therapeutics have been at times overlooked. It is likely that a similar experience may fall to the lot of others.

The patient should be kept warm, but the room should be cool, not over 70° F. A very warm room has been advised, and there are many surgeons who still prefer it, believing that there is danger of chilling the patient by exposing the abdominal organs to cool air. This can be obviated in other ways, by keeping the patient's head and feet warm by hot water if need be, and protecting the trunk with rubber cloth. Chilling the peritoneum is

avoided by the use of warm sponges. One large sponge should be placed in the wound as soon as the tumor is removed. This prevents the escape of the intestines, and protects the peritoneum from the air. The sponges are held at the proper temperature by being kept in an empty pail which is placed in a larger pail filled with hot water. The sponges are thus kept dry, while the water in the chamber around the inner pail keeps up the warmth. In case the operation is a long one, the water surrounding the sponge-pail can be renewed.

Warm ether is also of value in avoiding shock and chilling the patient. This is obtained by using my ether-inhaler, in which the ether is vaporized in a reservoir and conveyed to the patient through a rubber tube. This warms the ether sufficiently to make it agreeable and safe. I have on former occasions spoken of the advantages of this ether-inhaler, by which the anæsthetic can be given pure, or diluted with pure air to any degree, and without the reinspiration of the expired air. I may add here that experience only tends to confirm my confidence in that method of using an anæsthetic such as sulphuric ether.

Regarding the after-treatment, the bed in which the patient is placed should be warmed to about the normal surface temperature. This can be done by hot-water bags under the bedclothes. The bags should be moved about, so that the heating shall be uniform. The patient's head should be covered with a soft woollen shawl or soft blanket. The hands should be kept under the bed-covers and not disturbed. The pulse should be watched at the temporal artery. A hot-water bag may be placed near the feet, but not in contact with them. I have repeatedly seen the feet burned by placing a hot-water bag close to the skin. This will not occur when the bag is wrapped in flannel. The air in the room should be kept at about 70° F., and ventilation secured without having the patient in a draught. For a number of hours ether is thrown off with the expired air, and it is difficult to keep the air in the room agreeable. It is fortunate if the patient sleeps after the operation, and no effort should be made to awaken her, as is frequently done, to find out how she feels.

During the first twenty-four hours or more, the more rest that can be obtained the better. Absolutely nothing should be given in the way of food or medicine unless there is some urgent demand for either. Nausea and vomiting, which occasionally occur, should be counteracted with sips of hot water if the patient is anxious to have something to drink,—not otherwise.

Keith usually gives a hypodermic dose of morphine immediately after the operation, to control the restlessness which supervenes when the patient comes out of the anæsthesia. This is not always necessary. I wait and see if there is much restlessness or pain, and if there is, the morphine is given. Especially is this necessary if there be pain. Nervous restlessness alone can often be controlled by the efforts of a judicious, experienced nurse. When this fails, morphine should be given; but if the patient



can be controlled until night, it is better to withhold the morphine until then.

This expectant treatment should be continued until the stomach has become reliable and gas has passed from the bowels; and it will be found in many cases that nothing else is required during the first forty-eight hours. I am sure that great harm is done by giving nourishment and medicines when there is no demand for either. I certainly have seen more harm come from doing too much at first than from doing too little. There are exceptions to this rule of doing nothing. In case the vomiting continues, and is not relieved by hot water, I use the following: *Magnesiæ carb.*, ʒij; *magnesiæ sulph.*, ʒiij; *aquæ menth. pip.*, ʒiij. Of this, a teaspoonful may be given every one, two, or three hours in a dessertspoonful of water. This prescription is used in the Samaritan Hospital in London.

A mustard plaster to the pit of the stomach is also useful. When these remedies fail, and the patient complains of burning in the stomach, dessertspoonful doses of iced water may be used. When the patient is depressed, ten drops of whiskey in a teaspoonful of water every few minutes will be of service. In desperate cases I have given a large quantity, as much as the patient could drink, of lukewarm water and a little table salt. This is thrown off promptly, and sometimes gives relief. It should not be repeated. If relief is obtained and the nausea returns, the stomach should be washed out in the usual way.

When the vomiting is attended with abdominal pain, morphine hypodermically will give relief in many cases.

The foregoing treatment has reference to guarding the patient from shock.

There remain for consideration peritonitis and septicæmia, which may occur after laparotomy.

From recent reports in the literature of medicine it appears that a new departure has been taken in the after-treatment of cases of ovariectomy and similar operations. In place of giving opium and keeping the bowels at rest for several days, the bowels are moved early, and opium is withheld. Cases which show signs of septicæmia or peritonitis are given saline cathartics. It is claimed that free action of the bowels effects a kind of drainage which arrests the tendency to inflammation of the peritoneum, and also favors the elimination of septic material. This appears rational on theoretical grounds, especially in view of the fact that in well-marked septicæmia there is frequently a spontaneous serous diarrhoea, which occasionally is followed by a lowering of the temperature for a time. It is seldom, however, that permanent improvement occurs after elimination by purgation. Whatever theories or facts may be advanced in favor of this plan of treatment, one should gladly accept it, or any other which might prove better than the old ways of managing such cases. But I have failed to see that this new treatment has many advantages.

So far as I can learn, the results, on the whole, do not compare well

with those of other surgeons who give opium and let the bowels and the stomach rest until the first dangers are past. Furthermore, I have found in my own practice that as soon as there are evidences of peritonitis or sepsis the stomach is disturbed and will not retain saline cathartics, or anything else, for that matter. To state this in another way: as soon as the indications for cathartics appear, it is impossible to have the patient retain them, in the great majority of cases.

Perhaps the advocates of this treatment may be able to anticipate the coming storm, and, by giving salines, ward it off; but I have not been able to do so.

Regarding the use of opium, or rather the discarding of it, in the after-treatment of laparotomy cases I am still more conservative. While there are a number of reasons why it should be used, I have not yet heard of any good reason why it should not be, in certain cases.

That there are patients who do not need opium, and others with whom it does not agree, must be admitted; but the majority require it to relieve pain, produce sleep, and, above all, to secure rest and quiet, which are so necessary to recovery after major operations. These effects of opium, it may be claimed, simply contribute to the comfort of the patient, but do not secure safety or aid in recovery. Granting that such may be the case, the humane surgeon will find in this good reason for the use of opium; but I am confident that opium has a therapeutic value in addition to that of relieving suffering.

The danger from shock which arises from major operations is, I am sure, controlled by opium better than by any other drug. So also is the depression from anæmia resulting from hemorrhage. All careful observers have noticed that the rapid, feeble pulse has become fuller, slower, and steadier under the influence of opium. The anxious, pinched face also changes to a better expression. This has led me to look upon opium as the most reliable of all heart tonics in the depression which follows these operations. When the organic nervous system is tottering under the oppression of severe injuries to the abdominal and pelvic viscera, opium is the greatest sustaining agent. Alcohol, no doubt, will bridge over a moment of extreme and immediate danger, but its effects must almost always be supplemented with opium in order to obtain a continuous sustaining effect.

Perhaps more important still is the question, Does opium have the power of preventing peritonitis and septicæmia, or of controlling their fatal tendencies? To judge fairly of the therapeutic effects of opium in surgery, it is necessary to keep in mind the fact that after an operation there are injured or damaged tissues left that must be repaired. These tissues may or may not be affected with septic material, but in either case the safety of the patient depends upon these wounded tissues being speedily closed in by reparative material, which restores continuity of tissue and at the same time protects the normal surrounding tissue from inflammation and the patient from general septicæmia. Now this process, by which the general system is protected from the dangerous effects of local injuries, requires



time,—less time than is required to restore the injured tissue or heal the wounds; but it is the most important time, because upon the completion of this protection depends to a great extent the safety of the patient. Wounds may do badly, but, if an exudation has been thrown around them which protects from septicæmia, recovery may be expected. Of course, the modern surgeon protects his cases from sepsis by his cleanly operating; but in spite of his best efforts there may be trouble occasionally, and then the great point is to gain time for this natural protective process, which comes, or should come, first in the order of restoration. The principal condition necessary to secure the protective factor in the general process of repair is repose or quietude of the nervous and circulatory systems, and opium is the most potential agent in effecting this condition. The process of repair is arrested when the nervous system is in turmoil and the circulation is running wild, and opium should be used to give the necessary rest. It is a fatal mistake to wait until there is evidence of inflammation or septicæmia. It should be given to control the nervous excitation which generally precedes these complications. Opium fails to do all that it is capable of doing if it is not given in time, and it is therefore condemned as useless when the fault lies in the mode of using it.

The time to give it, then, is an important question. Some of the most successful surgeons give it immediately after the operation, and that is best when the case is bad and there is shock. In easy cases I prefer to wait until the other effects pass off to some extent; and if there is distress or pain present, then is the time to give opium, and the effect should be kept up until there is no danger of complications, so far as the condition of the patient indicates.

The way of giving it is of some importance, no doubt. I prefer to give it at first hypodermically, and keep up the effect in that way, or by rectal injections of opium and warm water.

Having advocated the use of opium and objected to the use of purgatives early in the treatment of this class of surgical cases, the question which follows is: When shall the opium be withdrawn and cathartics resorted to? Opium should be withdrawn gradually, as the constitutional and local evidences of inflammation subside, and then cathartics or laxatives should be given. To state this in another way: opium should only be given when there are indications for its use, and it should be abandoned so soon as these indications subside. The bowels should rest until the time for peritonitis is past, or, if there has been inflammation or sepsis, when the acute symptoms and signs of these have subsided.

*CASE OF DERMATITIS VESICULOSA NEUROTRAUMATICA  
OF FOREARM.<sup>1</sup>*

BY LOUIS A. DUHRING, M.D.,

Professor of Skin-Diseases, University of Pennsylvania.

A. A. is a single woman, aged twenty-nine years, of small stature, frail, and spare. There exists a history of varied nervous symptoms extending over the past three years, including frequent and protracted gagging and vomiting attacks; complete cessation of the menstrual flow two years ago, which condition still exists; heart palpitation; crying spells; and globus hystericus. She was burned with a flat-iron eighteen months ago on the flexor surface of the left forearm just above the wrist, the area being about the size of a silver dollar. The burn was superficial and only slightly blistered, and at first presented no peculiarities. It did not, however, heal readily or entirely, and from some unknown and internal cause began to break out anew, and within a month from the accident showed a superficial gangrenous patch, confined to the region of the burn, which remained about six weeks. The patch now began to be more inflamed and painful, with at first darting then aching pains, which continued in about the same severity for two months. The whole forearm at the date of the gangrenous patch was reddened, swollen, and tender, and was accompanied with throbbing pain, which could be distinguished from the darting pain.

The present form of eruption first appeared about the time the burn seemed to be nearly healed, or a month or six weeks after the accident, in the form of a single papulo-vesicle, or a "pimple," and this not at the site of the burn, but on the extensor surface of the forearm. In a week or two this lesion ulcerated and crusted, and other similar papulo-vesicles, vesicles and blebs appeared beside or near this one until the present area of disease was ultimately attained. Some healed while new ones formed, most of them leaving scars as they passed away. Various forms of local treatment were employed, none of which seemed to possess power to arrest the process, nor indeed to favorably influence the eruption. Arsenic was on several occasions prescribed, but had to be discontinued on account of intolerance of the drug. Reference has been made to the swollen and painful condition of the whole arm at times; this has occurred frequently,—every few weeks or even oftener,—and is invariably aggravated by exertion or any exercise of the limb. After these attacks of general pain and swelling, the whole limb is sore to contact, and is painful within. The pain, both darting and aching, is most severe in damp or cold weather.

When I saw the case first, in January, 1891, the lower half of the forearm was involved and encircled by the disease, and especially the extensor surface, the burn, it will be remembered, having been seated on the flexor surface. The disease consisted of a small, hand-sized, irregularly-shaped, ill-defined, chronically-inflamed, vesicular and bullous, herpetic-looking, more or less crusted, scarred patch, with scars considerably beyond the inflamed skin. Apart from the old scars, it possessed at first sight the general appearance of an injury due rather to the local action of an acid or to some chemical substance than to disease from within. There was, moreover, some oozing and discharge from broken or ruptured vesicles, blebs, and excori-

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<sup>1</sup> Read before the College of Physicians, Philadelphia, December 2, 1891.



ated surfaces. The inflammatory process of the skin was superficial, for there was but little thickening, and the scars were not deep. The vesicular and bullous lesions were irregular in outline, more or less angular; distended, but with no disposition to rupture; some flat, others raised, and usually were unaccompanied by areolæ. They possessed an herpetic aspect, and from this characteristic formation were manifestly due to direct nerve influence. The crusts were depressed, saucer-shaped, and adherent to the skin in the centre, with everted edges. They were variegated in color, with bluish and blackish tints. The scars were plainly the result of the vesicular and bullous lesions. The patch was irritable, sore to the touch, and painful, and the whole extremity up to the shoulder was likewise the seat of darting nerve-pain.

The process has continued in much the same manner up to the present date, although the pain in the patch and the nerve-pain in the limb are not so severe as last winter, nor is the inflammation of the skin so violent now as formerly. With the view of stimulating the nerve-trunks and fibres into healthy action, I advised the use of a weak galvanic current. This has been applied for a month, but no positive results have been obtained. Before abandoning the remedy, however, it is proposed not only to stimulate more freely, but also to act upon the nerve-trunks at remote points above the seat of the disorder.

Concerning the pathology of the disease, it may be stated that I believe the process to be a mild form of neuritis of a peculiar kind, having its origin in the burn, from which it extended, involving collateral as well as the nerve-trunks. It appears to be a local disease,—that is, to be confined to the limb. The hysteria must, of course, be taken into consideration. It is questionable, however, whether the symptoms can be construed as indicative of a central or reflex nature. The latter explanation has been suggested by Kaposi, Doutrelepon, and others for a series of similar though not identical cases, occurring for the most part in hysterical women, to which further reference will be made. The possible factitious nature of the disease need not be entertained. The question as to the infectious nature of the disease may be alluded to, but there do not seem to be any symptoms pointing that way. The case is a rare one, although I am aware that more or less similar forms of disease have been recorded. With the title "Traumatic Neurosal Pemphigus," Dr. J. H. Galton, of England, has recently reported a case similar to the one just considered (*British Medical Journal*, June 13, 1891).

The patient was a well-nourished, intelligent girl, aged seventeen, who had suffered from fits of an epileptic nature from childhood. In December, 1887, while cutting wood, she chopped off the distal phalanges of the index and ring fingers and cut through the middle phalanx of the middle finger. The wounds did not heal readily, but remained open for three months. Shortly afterwards patches of redness, followed by blebs, appeared on the left wrist, hand, and arm. The eruption was peculiar from the rapid way in which it spread; sometimes in a quarter of an hour the whole hand and arm would be covered with large blebs, which would burst, and give out a thin, sticky, watery discharge, which on drying would leave the surface of the skin of a purple or bluish tint. The circulation also seemed feeble.

In February, 1889, she had a crop of these on the left leg. Up to that time she was rarely without a series of blebs or threatening of them for quite twelve months. Various remedies, including arsenic and iron, were tried without effect.

At this time the puckered scars of the ring and middle fingers were very tender, and the stumps were amputated.

In March, 1889, she had a much slighter return of vesicles, and since, for the next two years, only occasionally a few vesicles. At one period a small fragment of bone worked out of the dorsal surface of the wrist. The vesicles occurred in irregular patches upon both surfaces of the forearm in the area of the median and ulnar nerves.

Dr. Galton considers that the irritation was reflex because of the disseminated distribution of its effects and the occurrence of the disease on the leg of the same side, as well as its cessation after removal of a source of irritation upon the median nerve alone.

Erasmus Wilson<sup>1</sup> refers briefly to the case of a medical man who punctured his right hand. Three or four weeks afterwards an eruption of blebs made its appearance on the left thigh, and was repeated from time to time for eighteen months. Their outbreak was preceded by feverish symptoms; there was a scalded sensation in the skin, and the next morning a fully-developed bulla would be discovered.

A similar form of disease has recently been narrated by Ehrmann,<sup>2</sup> that of a pemphigoid eruption, having its seat upon the district of the trigeminus, due to a carious tooth, which later appeared on the other side of the face. The eruption recurred from time to time, and remained unilateral until the removal of the tooth, when it manifested itself on the other side.

Professor Kaposi,<sup>3</sup> of Vienna, with the title "Pemphigus Neurotico-traumaticus (Hystericus)," reports the case of a female nurse, aged twenty-two years, who had wounded the nail-fold with a rusty nail, the wound having been dressed with iodoform. In a few days blebs appeared on the dorsal surface of the middle finger, and a few days later on the dorsum of the hand and wrist. Four weeks after the accident, when she first came under observation, there existed a reddened, painful patch, about the size of the palm of the hand, covered with large blebs. Immediately afterwards blebs began to appear in other localities, being always preceded by pain in the affected part, followed in two or three hours by bright redness over a variably-sized area, upon which urticarial lesions formed, succeeded in a few hours by blebs, from the size of a pea to an egg. With each attack the cutaneous involvement became more general. Kaposi regards the disease as a neuritis following a wound, notwithstanding that the further course of the affection was not on the track of the wounded nerve. From the peripheral excitation the process, he thinks, passed over to the central nervous system, more especially to the vaso-motor system.

Dr. D. W. Montgomery,<sup>4</sup> of San Francisco, relates the history of a medical student, of a neurotic temperament, who received a blow on the index

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<sup>1</sup> Diseases of the Skin, p. 307, London, 1867.

<sup>2</sup> Archiv für Derm. u. Syph., 1890, p. 954.

<sup>3</sup> Wiener Klin. Wochenschr., No. 22, 1890.

<sup>4</sup> Occidental Medical Times, October, 1891.



finger of the left hand, causing a wound which was slow to heal, almost necessitating amputation. Three years afterwards, and during the following three years, a pemphigoid eruption invaded the skin and mucous membranes of different regions, which both Dr. Montgomery and Dr. Regensburger, who also had the patient under observation, regarded as due to the previous traumatism, notwithstanding the long period elapsing between the wound and the cutaneous manifestation.

Similar to this is the case narrated by Kopp,<sup>1</sup> of Munich, in which, five years before the cutaneous manifestation, the patient was burned on the left hand. The wound inclined to ulcerate, but finally healed with keloidal scars.

Routier,<sup>2</sup> of Paris, gives the history of a young girl who was affected by panaritium, which was followed by numerous gangrenous patches on the skin of the same hand and forearm, which subsequently spread over the upper portion of the thorax. This observer is inclined to regard the disease as due to a general neurosis.

Professor Doutrelepon,<sup>3</sup> of Bonn, under the title "Acute Multiple Gangrene," reports the case of a female nurse, twenty-one years of age, who stuck herself with a needle under the left thumb-nail. The disease at first was confined to the left upper extremity, but it soon became bilateral, and during the succeeding five years, until the date of her death, every region of the skin, and also the mucous membrane of the upper air-passages, the conjunctivæ, and the vagina, became invaded. Bronchitis, catarrhal pneumonia, and tuberculosis, with a fatal issue, followed. In the beginning all the lesions were gangrenous, but subsequently vesicles and blebs occurred on the gangrenous patches. Doutrelepon<sup>4</sup> (after an interval of four years) has recently given the sequel of this case, and, in the light of Kaposi's series of cases (to be referred to presently), is inclined to look upon it as a universal herpes zoster gangrænosus. Kopp now also takes the same view of his case, to which I have briefly referred.

As allied to this group of cases, I may refer to those examples of so-called gangrenous herpes zoster reported by Kaposi to which allusion has been made, and also to those cases designated by authors as "spontaneous gangrene" and "hysterical spontaneous gangrene." Kaposi<sup>5</sup> has recently reported four of these peculiar cases, to which he gave the name "zoster gangrænosus recidivus atypicus hystericus." These titles sufficiently designate the characteristics of the eruption, but the manner in which they are produced, whether reflexly from the brain or through the vaso-motor system, is not clear. Kaposi is of the opinion that they arise from an hysterical basis and are vaso-motor or tropho-neurotic, and may be explained by the irritation going

<sup>1</sup> Münchener Med. Wochenschr., 1886, No. 38.

<sup>2</sup> La Semaine Médicale, 1888, pp. 416 and 428.

<sup>3</sup> Archiv für Derm. und Syph., 1886, p. 179; and *ibid.*, 1890, p. 385.

<sup>4</sup> Archiv für Derm. und Syph., 1890, p. 385.

<sup>5</sup> Archiv für Derm. und Syph., 1889, p. 561.

from the peripheral nerves directly through the cutaneous vaso-motor centres, or reflexly, meeting in the cord or brain, and calling forth the symptoms.

I have thus brought forward a case which at first seemed obscure in its nature and difficult to classify. Upon looking into the subject we find, however, that more or less similar cases are on record, reported by several well-known observers. Notwithstanding the presence of hysteria, an explanation of the symptoms—nervous and cutaneous—may be found, I believe, by regarding the process as a traumatic ascending multiple neuritis.

In all the cases to which reference has been made, there exists a positive neurotic pathology, which, however, differs somewhat in certain particulars. The most interesting point is whether they are reflex in their nature. This view, as we have seen, is held by several distinguished observers, and the explanation touches upon an almost untrodden, but important, field in cutaneous pathology. In the case which I have described, however, there does not seem to be sufficient ground for regarding the affection as reflex, the symptoms being explicable by local pathology, but I can well understand this to be the proper explanation for some of the other cases to which attention has been directed.

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*THE TREATMENT OF EPILEPSY; WITH SPECIAL REFERENCE TO THE USE OF POTASSIUM BROMATE, MAGNESIUM BROMIDE, NITRO-GLYCERIN, ANTIFEBRIN, SULPHONAL, ETC.*

BY GUY HINSDALE, M.D.,

Assistant Physician to the Orthopædic Hospital and Infirmary for Nervous Diseases, and to the Presbyterian Hospital; Fellow of the College of Physicians, Philadelphia.

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EVER since its introduction into the treatment of neuroses by Sir Charles Locock, in 1857, bromide of potassium has held a more and more prominent position as a therapeutic agent. Although the remedy is a valuable one, there are frequently serious disadvantages attending its use in cases which require a long course of treatment. Fœtor of breath and acne are common occurrences. The skin may even undergo severe ulceration,<sup>1</sup> and its sensibility may be decidedly impaired. Impotence, aphonia, paralysis, hallucinations, loss of memory and of the senses, in short all the depressing features of bromism, have frequently convinced the patient that the remedy is worse than his disease.

Bromides of ammonium, sodium, lithium, calcium, magnesium, gold, and nickel have been tried in the hope of finding some combination less

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<sup>1</sup> S. Weir Mitchell, Transactions of the College of Physicians, 1870, p. 347.



liable to give rise to such unpleasant symptoms. Not only bromides of the metals but bromides of the organic bases have been used. No matter with what base bromine may be combined, it has a distinct and independent action, although it will not materially interfere with the action of the base.

Dr. B. W. Richardson<sup>1</sup> has used quinine bromide, morphine bromide, and strychnine bromide,—combinations which produced very interesting effects. The quinine bromide could be taken freely by those wholly unable to take the alkaloid or its other salts; combined with morphine bromide it favored the sedative action and obviated astringency; in the strychnine compound it was said to prolong or subdue the action of strychnine on the muscles.

Besides bromides chemistry affords bromates; their composition is analogous to that of chlorates,—*e.g.*,  $\text{KBrO}_3$ ,  $\text{NaBrO}_3$ , etc.

#### POTASSIUM BROMATE.

Potassium bromate may be prepared by treating a strong solution of potassium hydrate with bromine until the brown color caused by the addition of the latter is entirely discharged. The resulting mixture will consist of five molecules of bromide of potassium and one of bromate of potassium,—*viz.*,  $6\text{KOH} + 3\text{Br}_2 = 5\text{KBr} + \text{KBrO}_3 + 3\text{H}_2\text{O}$ . On evaporating the solution to dryness and treating repeatedly with alcohol, the bromide is dissolved, the bromate remaining insoluble.

The salt forms in colorless anhydrous crystals; on slowly cooling it crystallizes in four-sided and six-sided plates or in cubes. It has a slightly-acrid taste, and is soluble in five parts of hot and in twelve parts of cold water. It is permanent in the air, but it is decomposed by strong acids and by heat in the presence of deoxidizing agents. There is nothing, however, to prevent its being mixed with sulphates of quinine and morphine, chloral hydrate or iodide of potassium.

The bromate of potassium was prepared in the above manner, for Dr. Weir Mitchell, by Mr. Genois, and was used in the spring of 1881 in the Infirmary of Nervous Diseases and in Dr. Mitchell's private practice. I also made a personal trial of the substance.

On one day I took twenty grains, on another day, forty grains in one dose. On other days doses of ten, twenty, and finally thirty grains were taken three times a day. The first dose of twenty grains caused a rise of the pulse in one hour from 70 to 90 and a subsequent fall in one hour to 68, but did not produce any feeling of weakness, sleepiness, or discomfort. The forty-grain dose lowered the frequency of the pulse from 78 to 60, and was followed in four and a half hours by loose watery discharges from the bowels and by drowsiness. The dose of ten grains taken three times in the day was followed by a fall of the pulse-rate from 78 to 58, the pulse continuing low until the next morning. Twenty grains three

<sup>1</sup> The Practitioner, London, 1871, vol. vi. p. 337.

times in one day had the same effect, lowering the pulse to 54, with no weakness, sleepiness, or unusual manifestations. Thirty grains three times a day lowered the pulse-rate from 62 to 54 per minute, caused vomiting and purging, which continued freely and repeatedly through the night, with sleepiness and vomiting four times the next day. Not until the third day could the stomach retain food.

The following notes are from the records of twelve cases of epilepsy in which bromate of potassium was ordered; four were in the private practice of Dr. Mitchell, and the remainder in his clinic at the Infirmary for Nervous Diseases.

CASE I.—Cora K., aged fourteen, an epileptic since the age of two and a half years. The first convulsion was accompanied by paralysis of the right side and followed by post-paralytic chorea. At her eighth year she had a set squint and choreal habits. These habits subsided towards the thirteenth year, when she had more control over herself. There were also delusions about seeing people, occasional diplopia, nausea, and confusion of ideas. Attacks occur about once a week, or oftener, accompanied by loss of consciousness, numbness of the right side, nausea, but no twitching. Ordered potassium bromate, gr. v, with ginger, t. d. A few days later the dose was increased to gr. xv, which caused nausea. Reduced the dose to gr. x. At the end of two weeks she had had no attack. She was less irritable and was not sleepy. Increased to gr. xiiss. The last entry shows one attack during the month she was under observation.

CASE II.—Martha J., aged twenty-eight, a confirmed epileptic. The attacks had increased in frequency from one in a month to one daily. She had taken such large doses of bromide of potassium as temporarily to loose speech. Under bromide of lithium, gr. x t. d., with minute doses of chloral and morphine, two spells occurred in two weeks. For ten weeks the patient did very well under bromides given in doses of from twenty to forty grains and, later, ten grains t. d.

April 9, 1881, bromate of potassium, gr. xii–xx t. d., ordered. Attacks occurred on the 11th, 20th, 26th, and 30th of April, and May 3, 5, and 28. No attacks then occurred for six weeks while taking the bromate. The patient's skin remained clear and free of any eruption. Once, however, the bowels became loose.

She then took a mixture of potassium bromide (gr. xv) and bromate (gr. v) for several months. The attacks occurred in periods of from three days to three weeks. The disturbance of the stomach and bowels then demanded a change of treatment.

CASE III.—Annie A., aged thirteen, subject to general epileptic spasms averaging seven daily. They were brought on by the least excitement, and were probably hysterical. Ordered potassium bromate, gr. v–x t. d. On the seventh day she had her first severe attack since taking the bromate. The drug made the patient quite sleepy and purged her freely, for which reason it was abandoned.

CASE IV.—D. L. D., aged eighteen months. In good health till the ninth month, when epileptic convulsions came on without known cause. She had from one to three and, later, ten seizures of *petit mal* in an hour. She was very constipated; urinated irregularly; had taken bromides freely. Ordered bromide of potassium, gr. ii, every two hours for two days; then bromide of potassium, gr. v, and bromide of ammonium, gr. ii, every two hours, and occasionally a dose every hour. Still no effect. Then bromide of potassium, gr. x, and bromide of ammonium, gr. v, every two hours, without effect. Then injections of five grains of chloral hydrate, with the same quantity of bromide of potassium administered by the mouth, with calomel purges and lactopeptine and phosphates, seemed to control the spasms.

May 17, 1871, ordered potassium bromate gr. iiss every three hours. After four



days' treatment she would have as many as ten or more spasms in an hour. Nausea coming on, the drug was discontinued.

CASE V.—George L. J., aged five, a weakly child, of bad family history. At the age of three he had his first convulsion. After three weeks spasms reappeared, numbering from six to as many as one hundred and fifty in a single day, during which he was rigid and unconscious. For two weeks he was free from attacks while taking potassium bromide, gr. iiss t. d. Then he was ordered to take potassium bromate in the same quantity. On the eighteenth day, having been free from spasms, he suddenly had thirty attacks in one day; in three days more, three attacks. He was then taking thirty grains daily; this was reduced to ten grains, given in two doses. He vomited, but could eat again immediately afterwards. During the following three weeks he had comparatively few attacks.

CASE VI.—George W. H., aged five. Epileptic seizures for one year past. Sudden losses of consciousness at first, lasting ten minutes; the patient falls, but is not convulsed. After taking from five to two and a half grains of potassium bromate, the drug was discontinued at the end of five days, on account of vomiting.

CASE VII.—W. J. S., aged thirty-one. Epileptiform attacks for six years. Gr. v t. d. caused vomiting at first. Took the remedy for one month; no attacks.

CASE VIII.—Lizzie V., aged fourteen. Epilepsy three years. Grand and petit mal. Gr. v caused diarrhoea at first; it had to be suspended for one month. Some improvement.

CASE IX.—Rebecca H., aged twenty-one. Epilepsy twelve years, usually at intervals of about nine days. Bromate of potassium, gr. x t. d., with pulv. zingiber., gr. ii, pulv. rhei, gr. ii, and morphinæ sulph., gr.  $\frac{1}{20}$  four times daily, made the patient worse and produced nausea and vomiting.

The other cases failed to report.

In these twelve cases the result was satisfactory in one, doubtful in five, and unsatisfactory in six.

The drug evidently shares with the bromides the power of controlling epileptic seizures, but it is an irritant intestinal poison, lowering the pulse and depressing the heart to such a degree that in most instances it had to be abandoned.

#### MAGNESIUM BROMIDE.

This substitute for the potassium and sodium salts was used at the infirmary in Dr. Mitchell's clinic in 1883. Before using it on patients I tried it experimentally, as follows:

EXPERIMENT I.—October 10, 1883, at 6.14 P.M., two and a half grains of magnesium bromide dissolved in twenty-five minims of distilled water were injected into the right breast-muscle of a grown pigeon. 6.16, vomiting kernels of corn; the bird has a forward-and-backward swaying motion of the body. 6.18, is stupefied; vomiting repeated. 6.21, walks about a little. 6.22, vomiting. 6.35, unsteady and quite drowsy. 7.30 and 10 P.M., quiet. The following morning it was bright and lively, and ate grain readily.

EXPERIMENT II.—October 11, 1883, at 10.40 A.M., injected into the opposite breast of the same bird ten grains of magnesium bromide in thirty-five minims of water. The bird at once becomes stupid, but manages to stand. 10.42, prone; eyes closed. 10.45, breathing 32 per minute; very drowsy. 10.53, dead.

EXPERIMENT III.—October 13, 1883, 11.11 A.M., five grains of magnesium bromide dissolved in twenty-five minims of water were injected into a pigeon's breast. 11.16, crouched, with eyes closed; had a slight convulsive movement forward and

backward. 11.21, another convulsive movement; the bird in attempting to rise falls over on its face; these movements are repeated. 11.50, bird in crouching position; breathing quietly. 1.50 P.M., bird found dead, in crouching position.

Similar experiments with potassium bromide were made for purposes of comparison.

EXPERIMENT IV.—October 12, 1883, 9.50 A.M., two and a half grains of potassium bromide in twenty minims of water were injected into the breast-muscle of a pigeon. 9.54, bird apparently unaffected; walks about and picks up corn. 11.15, no apparent effect from the injection. October 13, apparently as well as ever. October 25, alive and well. October 29, dead.

EXPERIMENT V.—October 11, 10.55 A.M., ten grains of potassium bromide were injected into the breast-muscle of a pigeon. Being placed on the floor, it makes no effort to rise. 11.01, stands up. 12 M., has continued standing; no disposition to walk about; seems dull, but shows much less effect than in the case of the pigeon receiving magnesium bromide in dose of two and a half grains. There is no vomiting. 1 P.M., condition the same; still standing. October 12, dead several hours.

A personal trial of a five-grain dose produced no nausea or vomiting. It seemed to have no effect on the pulse. The salt has a disagreeable taste; it may be dissolved to the extent of eighty grains to the ounce of water:

Magnesium bromide was prescribed at the infirmary for eleven cases of epilepsy as follows: W. W., aged four and a half, ten grains t. d.; did well for two months. Lizzie J., aged twenty-seven, twenty grains t. d.; temporary effect good. P. Bair, aged four and a half, from five to ten grains t. d.; no improvement. Mrs. S., aged thirty-three, from fifteen to sixty grains a day; temporary improvement. Agnes McKall, aged fourteen, from ten to twenty grains t. d. for two years, with intervals; considerable improvement, but not permanent. Esther F., aged fifteen, fifteen grains t. d. for one month; did well.

Magnesium bromide was ordered for five other patients, but they failed to return. The remedy exerted an undoubted power in controlling the attacks, both as to frequency and severity; there was, however, apparently a greater liability to facial eruption than in the case of potassium or sodium bromide, and Fowler's solution of arsenic was usually given in addition.

#### HYDROBROMIC ACID.

This remedy was tried at the infirmary as early as 1884, and has been prescribed at various times since. The doses usually given were from one-half to one drachm of the dilute acid. As one fluidrachm of the dilute acid is reckoned equivalent to nine grains of bromide of potassium, the dose was never large. Hydrobromic acid has a very disagreeable, sour taste, and is best given well diluted in milk. In order to yield controlling effects it ought to be given probably in half-ounce doses, but this is rarely practicable.<sup>1</sup>

<sup>1</sup> See British Medical Journal, 1885, ii. 587.



The effect of this remedy has been fairly successful. Apparently it is not liable to cause acne<sup>1</sup> or muscular depression, and, in some cases, it is usefully added to lessened doses of alkaline bromides. Certainly, in some instances it does aid digestion, and, as Dr. Randolph proved by his experiments, has no tendency to impair that function.

#### NITRO-GLYCERIN.

The use of this remedy at the infirmary has not been sufficiently encouraging to insure its continuance. It was adopted in the service of Dr. William Osler in 1885-1886, in doses ranging from the one-hundredth to eight one-hundredths of a grain three times a day. Of nineteen cases under treatment for periods ranging from six weeks to six months, it was of temporary benefit to nine, evidenced by a reduction of the frequency of the attacks, whether *petit mal* or *grand mal*.

In some cases, where the improvement was most striking at first, the attacks soon returned, and the remedy had to be abandoned.<sup>2</sup>

#### NITRITE OF POTASSIUM.

Nitrite of potassium was tried in 1880. Both Dr. Mitchell and the writer made trials first in our own persons, the writer taking in one day as much as thirty-five grains.<sup>3</sup>

In a few cases of epilepsy in which it was tried, there were encouraging results. A girl, aged nine, after taking from one-half grain to two grains t. d., was apparently cured until it was found that the attacks were due to lumbricoid worms. The remedy proved too depressing in doses of over four or five grains, producing marked cardiac irritability. As Dr. E. T. Reichert has shown, it is capable of producing paralysis of the nerve-centres as well as of the skeletal and unstriated muscles. These drugs are, in a word, difficult to handle in clinical practice, and I do not encourage their prolonged use.

#### ANTIFEBRIN.

This remedy has been employed quite frequently at the infirmary. Better results were obtained in those lesser epilepsies, in which bromides failed, than in the greater epilepsies. The effect of this drug was fully observed in the case of a young man aged nineteen, a compositor by trade, who continued to use antifebrin for three years. Under the use of bromides his mental and bodily health became seriously impaired; in his fits he became maniacal, and he was so dangerous to those about him that he was compelled to abandon his vocation. Bromides made his condition worse. Antifebrin, on the other hand, kept his attacks down to such a number as

<sup>1</sup> H. C. Wood.

<sup>2</sup> *Journal of Nervous and Mental Diseases*, January, 1888, Report to Philadelphia Neurological Society.

<sup>3</sup> See *American Journal of the Medical Sciences*, July, 1880.

to make life useful. He insisted that it did him no harm in doses of from ten to twenty grains thrice daily, and purchased the drug in half-pound packages.

In the case of nine other patients, whose ages ranged from two to forty-two years, and in which antifebrin was used in doses of from one to twenty grains thrice daily, temporary improvement usually was noted, but in a few weeks it was necessary to return to bromides.

### SULPHONAL.

This remedy has been used as follows:

CASE I.—Mary F., aged twenty-two. Petit mal since ten years of age, occurring sometimes three or four times daily, but on application usually every three days. Sodium bromide was given without benefit for three months, from thirty to sixty grains daily. Biborate of sodium was used for two weeks, sixty grains daily, without benefit. Sulphonal five grains t. d., at first alone and then with sodium bromide fifteen grains t. d., controlled the attacks for a time, but they afterwards increased in frequency.

CASE II.—Fred. M., aged eleven. Epilepsy since one and a half years old, occurring, on application, once a week. Sulphonal, three to five grains t. d., was used for three months, with some relief.

CASE III.—Bella H., aged sixteen. Epilepsy since two and a half years of age. Attacks at irregular intervals,—from one to three months, or as frequently as twelve in one day; at time of application seven in one week. Sulphonal was used for ten months, three to six grains t. d. During the first three months from one to three attacks occurred weekly. The sulphonal caused so much stupor that it was suspended in the fifth month, and the seizures returned to one weekly. During the last three months there has been great improvement. Under sulphonal the attacks have become fewer and of less severity. Intervals of three weeks occur without attacks. In this case bromides apparently had no effect.

CASE IV.—Florence M. First attack at the age of seven months, during dentition. Has an aura; initial cry; followed by movements of the upper extremities. Attacks from one to five weekly. Sulphonal was used for five months, four to six grains t. d., under which the attacks were reduced about one weekly.

CASE V.—Mary E., aged sixteen. Epilepsy since the age of ten. Four or five attacks daily. Sulphonal, five grains t. d., used for six months. Patient became very drowsy. The attacks were greatly reduced in number. Intervals of one or two weeks occurred, but the attacks returned on suspending the drug. The final result was not satisfactory.

CASE VI.—Mary M., aged eight. First attack at the age of nine months. Seven attacks daily on application. Sulphonal, four grains t. d., exercised no decided control over the seizures after four weeks' trial. Attacks recurred as often as eight times a day. Antipyrin, five grains, and ammonium bromide, fifteen grains t. d., gave immediate, but temporary, relief.

A large number of other cases were treated with sulphonal, but the results were more or less unsatisfactory. In many instances the patients failed to continue its use for a sufficient length of time. Dr. Dercum, at Dr. Mitchell's request, used this drug at the clinic of the University of Pennsylvania and elsewhere, confirming the conclusions reached by Dr. Mitchell and his clinical associates. He informs me that he believes it to



be secondary in efficacy only to the bromides, and to answer admirably as a substitute when the latter have to be discontinued on account of bromism or other disagreeable complication.

Three or four grains in the case of children, and six or eight grains thrice daily in adults, answer best. It frequently happens, however, that patients are made very sleepy by its use. Two doses daily may be given in such cases.

Among other remedies which have been prescribed at the clinic are sodium biborate, lithium biborate, tincture of *cannabis indica*, tincture of *digitalis*, ammoniated copper, and antipyrin. None of these remedies have maintained themselves, although afforded a patient trial at the infirmary. The result has been that in epilepsy we have had to fall back upon the bromides of sodium, potassium, and lithium, and it is unlikely that any dependence will be placed on the thirteen drugs referred to.

Sodium bromide is the remedy most frequently employed, and can be borne for long periods when arsenic is used occasionally to check cutaneous disturbances. The experience of Drs. Mitchell, Sinkler, Morris Lewis, Osler, and my own observations extending over the last ten years at the infirmary, at which over three hundred and fifty cases of epilepsy have been treated, show that we have no permanent satisfactory substitute for sodium, potassium, and lithium bromide. These drugs have maintained their places in the order stated, and, as far as other remedies are concerned which are treated of in this report, it is probable that further trials will be futile.

I have thus brought together into one report a summary of the efforts made by the staff of the infirmary during the last decade to render more efficient the treatment of epilepsy. By beginning in the physiological laboratory and following out the results there obtained by patient study in the clinical service of the hospital, the knowledge of the subject can be still further advanced. The profession will not give up the search for substitutes for the alkaline bromides, notwithstanding the difficulties which attend such an investigation.

The failure of a treatment and the great success of a treatment may alike serve to interrupt or put an end to the attendance of a patient; consequently, in the case of a chronic disease like epilepsy, the reports of hospital practice are too often of little value because the time element is insufficient. By the systematic method of recording cases of epilepsy adopted in the infirmary, and which may be illustrated on a subsequent occasion, it is possible to see at a glance any given feature of the disease or survey the whole number of attacks during an entire year of treatment.

Dr. Weir Mitchell has expressed himself frequently in the clinic and has privately stated to me his own general conclusions as to the treatment of epilepsy, which I have the privilege of adding to this report. In the first place, great care is given to diet; meats usually are restricted. Occasional purges are employed and the condition of the skin is observed; arsenic in small doses is used in conjunction with the bromides. In this way the latter may commonly be continued without mischief over long periods

and in competent doses. In certain cases the bromides cause so much skin-trouble or mental disorder that it becomes desirable to lessen or stop their use for a time. Then sulphonal becomes valuable. Again, in the too frequent cases where the convulsive seizures are not controlled or do not exist, and we have to deal with only the lesser epilepsy in its many forms, anti-febrin will sometimes prove useful, and, when the patient becomes accustomed to it, may be employed for long periods, as some of the above cases show.

Nothing but long and continuous use of new agents in epilepsy is of use as a test of value. The old experience still exists, to the effect that change of remedy, of place, of diet, etc., may for a time lessen the number of fits. It frequently happens that when epileptics are admitted to the hospital for medical or surgical treatment, it is found that the fits cease altogether for days or weeks, even when the bromides have been, for a purpose, abandoned. It is the experience of Drs. Mitchell, Sinkler, and Lewis, and of all connected with the infirmary, that there are rare epilepsies in which the bromides increase the number of fits, others in which they cause homicidal mania, and in these we have to fall back on other drugs and those general means which should in any case unfailingly accompany the use of bromides.

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## *ON THE VALUE OF ALBUMINURIA AS A MEANS OF DIAGNOSIS.<sup>1</sup>*

BY F. R. STURGIS, M.D.,

Visiting Surgeon Third Venereal Division City Hospital, New York.

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IN place of reading a formal paper this evening, I propose to ask you to join with me in discussing the subject of the significance which albuminuria has in diagnosis, and for this purpose I shall merely introduce the topic and ask each member to give his opinion and recount his experience.

This question of albuminuria has two aspects, or, rather, two theories are held regarding it,—one, that albumin may be present in small quantities in the urine in a condition of perfect health; the other, that the presence of albumin in the urine is always indicative of disease.

In 1854, Gignon, of Angoulême, France, announced the existence in healthy urine of albumin that could be thrown down by chloroform (Greene). But this theory did not excite much attention, nor was it generally agreed to. In 1865, Gubler suggested that albumin was present in the urine of healthy persons; in 1870, Ultzmann found albumin in eight young persons who were in good health; and in 1873, Vogel stated that he had recog-

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<sup>1</sup> Read before the Harvard Medical Society of New York City.



nized that albumin might exist without appreciable lesion of any organ (Millard).

Dr. G. Johnson, of London, is also quoted by Millard as regarding the occurrence of albuminuria in persons in apparently perfect health as common, but I pray you to mark the use of the word *apparently*. This statement is somewhat misleading, for Dr. Johnson, in his little pamphlet on "Albumen and Sugar Testing," employs the following language: "I cannot too emphatically insist upon the fact that the smallest trace of albumin in the urine, either with or without the appearance of renal tube-casts, is abnormal and pathological." Senator is also credited with the statement that many cases of albuminuria are found in perfect health. Dr. Millard says, "I have myself detected, by Janret's test especially, albumin in numerous cases where no evidence of deranged health existed."

The most thorough and seemingly convincing cases on this subject were the experiments instituted by two French army surgeons, Drs. Capitain and Chateaubourg, which were conducted in a series of patients, the first of which bore upon the question of albuminuria in health and after the ingestion of food. Chateaubourg's cases were in nine series. Series I. to III., and VI. to IX., inclusive, were taken from soldiers. Series IV. and V. were taken from children.

#### SERIES I.

	Cases.
The urine was taken three hours after eating in.....	98
No albumin was found in.....	54
Albumin was found in.....	44
to wit, .007 to the litre in.....	20
.04-.08 to the litre in.....	24

#### SERIES II.

The urine was taken five hours after eating in.....	94
No albumin was found in.....	18
Albumin was found in.....	76
to wit, a decided cloudiness in .....	9
well marked in.....	32
faintly marked in.....	35

#### SERIES III.

Urine was taken two hours after exercise in the hot sun in .....	88
No albumin was found in.....	18
Albumin was found in .....	70

#### SERIES IV.

The urine was taken from healthy children ranging from six to fifteen years in .....	142
No albumin was found in.....	31
Albumin was found in.....	111
to wit, marked in.....	14
slight in.....	97

## SERIES V.

	Cases.
The urine was taken from students who were subjected to severe mental work while undergoing government examination in.....	50
No albumin was found in.....	4
Albumin was found in.....	46

## SERIES VI.

The urine was taken at 5.30 A.M., with rest and but little exercise the previous day, in.....	130
No albumin was found in.....	28
Albumin was found in.....	92
to wit, strongly marked in.....	33
of varying intensity in.....	59

## SERIES VII.

The urine was taken after a march of eleven miles in.....	111
No albumin was found in.....	11
Albumin existed in.....	100

## SERIES VIII.

The urine was taken on rising in the morning in.....	53
No albumin existed in.....	16
Albumin was detected in.....	37

## SERIES IX.

The urine from the same men as in Series VIII. was tested after they had taken cold bath in.....	53
Albumin was detected in all.....	53

Capitan's cases comprised but one series.

The urine was taken from children ranging from one and a half to eighteen years of age in.....	91
No albumin was found in.....	16
Albumin was found in.....	38
Albumin was not accounted for in.....	37

Leube also gives one series of a hundred and nineteen cases. No albumin was found in one hundred and one cases, while albumin existed in eighteen cases.

One striking fact is shown in this series of cases,—viz., the large number of albuminuric persons in the French series, the urine of whom was tested by Janret's method, and the small number in the German's cases. These latter, however, lose their value from the fact that Leube's methods of testing are not given.

The next cases which I shall offer for your consideration do not present this objection, and are very instructive. They are Mr. Dickinson's cases, one hundred in all, taken from hospital and private practice, and were tested for albumin by several methods.



Of these one hundred cases, we note that all the tests showed albumin in the urine in every case of disease of the kidneys, intermittent hæmaturia, fluid in the pleura, measles, diarrhœa, and peritonitis.

Throwing out the nineteen cases of renal disease, eighty-one remain, and twenty cases show albuminous urine when tested by heat and nitric acid, thirty-five show albuminous urine when tested by picric acid, twenty-two show albuminous urine when tested by ferrocyanide of potassium and citric acid, and twenty-six show albuminous urine when tested by acidulated brine solution. But every case, eighty-one in all, when tested by the double iodides of mercury and potassium show albuminuria, a proportion so large as to cause doubt about the accuracy of this test, a point to which I shall revert by and by.

	Number of Cases.	Heat and Nitric Acid.	Picric and Citric Acid.	Ferrocyanide and Citric Acid.	Merc. Pot. Iod. and Citric Acid.	Brine and HCl Acid.
Albumin from disease of kidney .....	19	19	19	19	19	19
Convalescence from nephritis.....	1	...	...	1	1	...
Stone in kidney.....	6	2	5	2	6	5
Disease of bladder or prostate.....	3	1	2	1	3	1
Diabetes mellitus.....	8	4	5	4	8	4
Diabetes insipidus.....	1	...	...	...	1	...
Excess of uric acid or urates.....	2	...	1	1	2	...
Excess of phosphates.....	2	...	...	...	2	...
Intermittent hæmaturia. ....	1	1	1	1	1	1
Organic disease of nervous system, tumor of brain, locomotor ataxia.....	3	...	1	...	3	1
Functional nervous disease, epilepsy, chorea, tinitus.....	4	1	2	...	4	1
Nervous debility.....	3	...	...	...	3	...
Valvular disease of heart and aneurism.....	3	2	2	2	3	3
Tubercular disease of lungs and peritoneum, etc...	7	...	2	...	7	...
Pneumonia and broncho-pneumonia.....	3	...	...	...	3	...
Bronchitis.....	1	...	...	...	1	...
Fluid in pleura.....	1	1	1	1	1	...
Typhoid fever.....	2	1	1	1	2	1
Measles.....	1	1	1	1	1	1
Tonsillitis.....	2	...	2	1	2	1
Convalescence from acute febrile affections.....	6	...	...	...	6	...
Disease of liver.....	5	2	2	1	5	2
Ulceration of stomach.....	1	...	...	...	1	...
Diarrhœa.....	1	1	1	1	1	1
Enteralgia.....	1	...	...	1	1	1
Peritonitis .....	1	1	1	1	1	1
Rheumatism, sciatica, muscular pain.....	8	2	4	2	8	2
Eczema.....	1	...	...	...	1	...
Anæmia and amenorrhœa.....	3	...	1	...	3	...
	100	39	54	41	100	45

Dr. Sandy's cases, taken from the General Hospital of Birmingham in England, next merit our attention. The urine was taken from one hun-

dred and forty-five patients. No albumin was found in forty patients, while the urine was albuminous in one hundred and five. Of these latter, sixty-four cases were attributed to renal disease and eighty-one were non-renal cases, forty-one showed albumin in the urine, and these forty-one occurred in cases of dyspepsia, debility, phthisis, and morbus cordis.

Life-insurance cases show a great difference, again, in the number of albuminous subjects. Dr. Mahomed found albuminuria present in 15.5 per cent. and Dr. Mann in 11 per cent. of the cases which were presented for life insurance.

From the above figures we observe how widely results vary as to the significance of albumin in the urine, and the number of cases in which it is found, no two of the tests agreeing with anything like unanimity. Indeed, one of the tests is open to suspicion from the very large proportion in which albumin occurs in the urine of so-called healthy subjects.

It will be well to say a few words about tests. The most common are by nitric acid, heat, picric acid, tungstate of sodium solution, and the double iodides of mercury and potassium.

Dickinson's tables show that in one hundred cases the largest proportion of positive results came from the use of the double iodides; every case tested showing albumin. The next largest proportion occurs when picric acid is used, fifty-four in one hundred; the next when the acidulated brine was employed, forty-five in one hundred; then ferrocyanide, forty-one in one hundred; and, last of all, the heat and nitric acid, thirty-nine in one hundred.

From this it is very evident that the various tests which are suggested and used for the detection of albumin in the urine are defective. When there is such a wide difference as exists between 100 per cent. with one test and thirty-nine per cent. with another, of positive results, the inference is that something else besides albumin is thrown down by some—if, indeed, it be not by all—of the tests in use; and in this respect nearly all writers upon this subject state as their conviction that most of the tests used are fallacious. Roberts goes so far as to say that all of these tests give reaction with normal urines, or with morbid ones which do not contain serum albumin, except, perhaps, the test by heat and by nitric acid, and claims that these two methods are the safest. In support of this assertion he gives a table in which urine was taken in thirty-one cases from healthy persons, with the following results:

	Reaction.	No Reaction.
Heat .....	0	31
Nitric acid.....	0	31
Acidulated brine.....	11	20
Picric acid.....	14	17
Tungstate test.....	28	3
Mercuric iodide.....	26	5

Dr. George Dickinson, on the other hand, claims that the picric-acid test is the best, for although it precipitates peptones, and this precipitation



cannot be distinguished from albumin at first sight, yet upon boiling the specimen, if the precipitate be due to peptones, it is dissolved, whereas, if albumin be present, boiling has no effect.

Millard prefers the double iodide of mercury, in which opinion he stands among the English-writing authors almost alone.

Dickinson agrees with Roberts in considering that heat and nitric acid are the best tests, condemning the ferrocyanide, the picric-acid, and the double-iodide tests as not sufficiently discriminating and as fallacious in their results.

Now, in view of these widely-diverse opinions upon this question of the presence of albumin in urine, it seems hardly possible to conceive that so many observers should have detected albumin when none existed, and yet I believe that in many instances such is the case. Although it may be objected that the mere fact that a large proportion of cases show positive results does not necessarily militate against the accuracy of any given test, still I cannot help feeling that a test which gives one hundred per cent. of positive results must be erroneous, and it occurs to me that possibly, while admitting that the precipitation of peptone, mucine, and other substances in the urine has given rise to mistaken ideas of albumin, there may be in normal urine something which has caused such differences of opinion, and I would suggest for your discussion and consideration a substance which, I believe, was discovered by Dr. John Greene, of Birmingham, England, to which he gave the name of "leth-albumen," and which he described in the *British Medical Journal* of May 10, 1879.

This substance is a constituent of healthy urine and is allied to albumin. It was obtained by precipitation with bichloride of mercury. This precipitate is then washed thoroughly and treated with sulphuretted hydrogen, acetate of lead, filtration again with sulphuretted hydrogen, etc., until the "leth-albumen" is obtained, which resembles albumin in some of its characteristics and is a nitrogenous product.

The relation which the ultimate analysis of this bears to albumin and urea he gives in his paper, in percentage, after deducting the ash :

	Albumin.	Leth-Albumen.	Urea.
Carbon.....	54.28	34.52	20.00
Hydrogen.....	7.33	5.71	6.66
Oxygen.....	22.40	47.19	26.67
Nitrogen.....	15.99	12.58	46.67
	100.00	100.00	100.00

Thus, while it resembles albumin in its constituents, it differs from it in the proportions in which they are found in every hundred parts.

Dr. Greene estimates the average elimination which takes place in health at 33.48 grains per day, but considers that this estimate will be ultimately found to be too low. He states that in cases of chronic Bright's disease the "elimination of the leth-albumen is materially diminished, but not so in the acute form; although there may be a large proportion of albumen

present in the urine, there is at first no decrease in the allied substance, but as the case becomes more and more chronic, it gradually diminishes, and in the end becomes altogether extinct." He has not been able to discover any other disease in which this precipitation is absent, although he has made numerous observations. He regards, however, one abnormal condition which will prevent the precipitation of the substance though it exist. He believes it to be extremely rare where such is the case and it occurs where urine is inordinately acid.

In looking over the tables which I have presented for your consideration this evening, we note one fact particularly, and that is that albuminuria exists apparently in many diseases besides those of the kidney, and in Dickinson's list it would seem almost as if every disease was complicated more or less with albuminuria.

Taking this fact into consideration I think we may safely draw the following inferences:

1. That albumin in the urine does not necessarily signify any renal disease.
2. That it exists quite frequently in a temporary form in many diseases unassociated with any organic renal complication.
3. That from the uncertainty in the method of testing, and of the various tests now used for its detection, it loses a great deal of its value as a means of diagnosis.
4. When present, no matter if it be in a small quantity, it is always a danger-signal, and, when persistent, indicates some serious organic lesion.

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## PENETRATING WOUND OF THE BASE OF THE BRAIN THROUGH THE LEFT ORBIT; HEMIPLEGIA; REMOVAL OF CLOTS FROM THE BASE OF THE BRAIN; RE- COVERY.<sup>1</sup>

BY ERNEST LAPLACE, M.D.,

Professor of Surgery, Pathology, and Clinical Surgery in the Medico-Chirurgical College, Philadelphia;  
Surgeon to the Philadelphia and Medico-Chirurgical Hospitals; Pathologist to St.  
Joseph's Hospital; Member of the Anatomical Society of Paris, etc.

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INJURIES of the base of the brain have generally been treated on the expectant plan, a certain fear of the *centres of life* having withheld the surgeon's hand from the sacred precincts. These cases have seldom or never been *surgically* dealt with, recovering only if the damage done had not been sufficient to cause death. In the following case such an injury was repaired by trephining low in the temporal fossa, lifting up the brain,

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<sup>1</sup> Read before the Philadelphia County Medical Society. •



and, by means of a special instrument, removing an offending clot of blood from the neighborhood of the crus cerebri.

This case establishes a new phase in the principle of drainage in brain surgery. Furthermore, the excellent results in this case following such a mode of treatment certainly warrant further efforts in the surgical treatment of the base of the brain.

R. B., aged ten years, whilst at play on the lawn of his parents' country residence, fell on a broken fencing-foil. The steel penetrated the left orbit, between the inferior orbital ridge and the eyeball. The child was found a few moments later in an unconscious condition, with the instrument still in the wound. It was removed by a servant, and the child placed in bed.

I saw the case about five hours after the accident. Dr. Keyser, who was first summoned to the case, declared, from an ophthalmoscopic examination, that the eyeball proper was uninjured.

There was coma, right hemiplegia, left facial paralysis, complete aphonia; respiration 30, pulse 140, temperature  $104\frac{1}{2}^{\circ}$ . Immediately above and about the centre of the left orbital ridge was an incised wound about one-quarter of an inch wide, from which oozed a little blood. Having but very meagre details of how the accident occurred, an exploration of the wound was determined upon. The patient being etherized, the cutaneous wound was slightly enlarged, and the handle of a Graefe cataract-knife was inserted into the wound, and sank almost by its own weight to a length of three and one-quarter inches into the wound, taking a superior and internal direction.

Inasmuch as no spiculæ of detached bone could be detected, the probability was that the instrument passed through the sphenoidal fissure, thence entering the base of the brain. The eye was apparently uninjured. There was, however, complete anæsthesia. Pupil dilated; insensible to light.

Having consulted with Drs. Keyser, Anders, and Shelly, it was determined to adopt the expectant plan of treatment; six ounces of blood were, however, extracted from the left median basilic vein.

*May 17* (night of accident).—Great jactitation of uninjured side of body. Quieted with one-eighth of a grain of morphine sulphate hypodermically, repeated in two hours. Temperature  $103^{\circ}$ , pulse 120. Five-grain quinine suppositories; peptonized milk two ounces every three hours.

*20th.*—Temperature  $104\frac{2}{5}^{\circ}$ , pulse 110, respiration 30. Sponged every fifteen minutes. Five-grain quinine suppositories; one-sixth of a grain of calomel three times daily; peptonized milk. Jactitation continues; coma continues.

*23d.*—Temperature  $99.6^{\circ}$ , pulse 100, respiration 26. General condition unchanged.

*25th.*—Temperature  $98.6^{\circ}$ , pulse 72. Collapse. Cold extremities; cold sweat. Teaspoonful of brandy every half-hour.

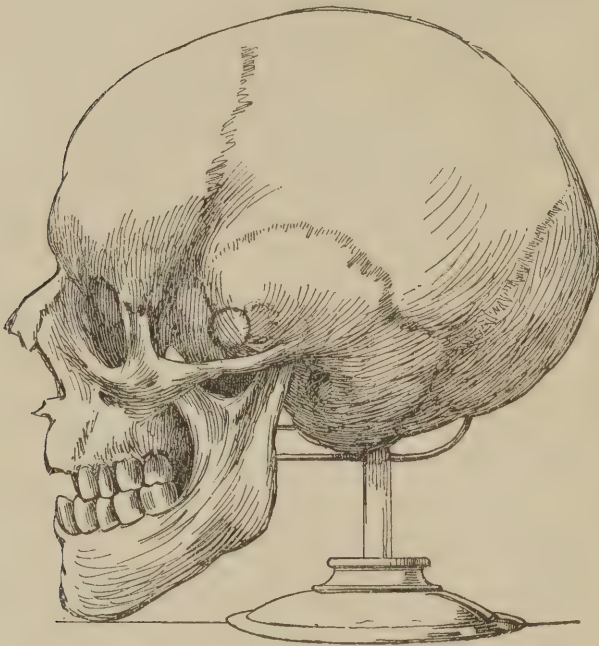
*27th.*—Collapse. Temperature  $96.8^{\circ}$ , pulse 72. Brandy; one-sixtieth of a grain of strychnine sulphate hypodermically every two hours.

During the intervals of collapse there was great restlessness. Great emaciation had taken place, and there was not the slightest improvement in the general condition of the patient. Judging that at least a part of the symptoms were the result of compression from a clot at the base of the brain, and wishing to offer a surface for the relief of tension within the cranium, trephining was resorted to on May 30, thirteen days after the accident.

*Operation.*—From the direction taken by the instrument it was evident that it had penetrated the middle fossa, and that hemorrhagic clots should be sought for in that locality. Accordingly, the patient being etherized, a horse-shoe incision three

inches long was made in the temporal region, down to the level of the zygomatic arch, and the tissues were lifted *en masse* from the bone. The trephine was rested on the middle of the zygomatic arch, and a three-quarter-inch piece removed (Fig. 1),

FIG. 1.



Showing exact location of trephine spot.

consisting of the temporal bone and a small fragment of the sphenoid; the dura mater appeared very congested.

To reach the centre of the base of the brain for the removal of the suspected clot, a miniature egg-beater, consisting of four loops of platinum wire (Fig. 2), had been improvised; this was perfectly malleable, and could be insinuated between the dura mater and skull without wounding the structures. Having reached the cavernous groove, the instrument could be pushed no further; it was then turned on its axis for the purpose of catching the coagula in its loops. This was effectually done, and about a teaspoonful of old clotted blood was removed piecemeal.

Whilst dragging more out, considerable venous hemorrhage

took place, most probably as the result of the removal of the clot that occluded the injured cavernous sinus.

The trephined opening was immediately plugged with iodoform gauze, and a graduated compress applied over it, secured by a tight bandage about the head.

FIG. 2.



Miniature egg-beater, made of platinum wire, adapted to a hæmostatic forceps, for removing the clots at the base of the brain.

*May 31.*—Patient reacted well after the operation. Temperature  $100^{\circ}$ , pulse 72, respiration 22. Very restless.

*June 3.*—Temperature  $98.2^{\circ}$ , pulse 80, respiration 24. Vomiting. Milk enemata every two hours. Dressings saturated with blood and serum. Slight return of consciousness; patient notices sounds.

*8th.*—Temperature  $97.6^{\circ}$ . On dressing the wound the patient makes signs with uninjured hand, recognizing things about him.

*11th.*—Temperature  $97.8^{\circ}$ . After an apparently great effort patient articulated a few words. Dressing completely saturated with serum. Motion has gradually returned in affected limbs. Hypodermic injection of strychnine sulphate one-sixtieth of a grain twice daily. Patient greatly emaciated.

*15th.*—Temperature  $97.3^{\circ}$ , pulse 64. Speaks more distinctly. Memory remarkably clear; reason perfect. Dressings daily saturated with serum.

*July 1.*—Patient's condition has steadily improved; voracious appetite. Massage, electricity, and general inunctions with cod-liver oil to increase nutrition.



10th.—Secretion has ceased from the wound. A plastic operation was performed under ether by which the wound was closed. Union by first intention, except at the most dependent portion, where a sinus remained about one month, giving exit to slight serous exudate.

September 1.—Patient sits at table. Wound completely healed. Has gained fifteen pounds. Remarkably bright and cheerful.

November 15.—Has apparently equal use of both inferior extremities. Can stand and make a few steps without support. Pupil of left eye somewhat contracted. There remain anæsthesia of the eye and internal strabismus, showing an injury to the ophthalmic division of the fifth pair, which supplies sensation to the eye, and an injury to the sixth pair, which supplies the external rectus, giving a paralysis of this muscle, hence internal squint, thus corroborating our suspicion that the foil penetrated through the sphenoidal fissure. The improvement continues so steadily that everything points to an ultimate complete recovery.

I must here render thanks to Dr. James M. Anders, of Philadelphia, and to Dr. Shelly, of Ambler, Pa., for their unremitting aid in carrying out the medical treatment of the case.

*Remarks.*—1. From the direction taken by the instrument producing the injury, it is probable that it passed through the sphenoidal fissure, wounded the cavernous sinus, the crus cerebri, and entered the left lateral ventricle.

2. The hemiplegia was due to venous hemorrhage and laceration of the crus cerebri and other structures, no spiculæ of bone being detected.

3. The coma, hemiplegia, aphonia, and progressively unfavorable course of the patient were relieved after trephining, low in the temporal fossa, lifting the brain, and removing blood-clots from the seat of hemorrhage.

4. The vast amount of oozing and secretion from the opening was evidence of the great intracranial tension and of the absolute necessity of drainage.

5. Consciousness returned shortly after the relief of the intracranial tension. Phonation and articulation soon followed.

6. The brain is situated in an unyielding box,—the cranium,—and, therefore, when exposed to a great irritant, little allowance has been made by nature for the resulting expansion (congestion, swelling in other parts) following upon the irritant. With a view of remedying this condition, the brain if not in a position to expand freely as a result of the irritation, should by trephining be given an opportunity of drainage, which meets the same object by offering a spot of least resistance to relieve the tension within the brain.

This principle applies to many cerebral conditions where symptoms of general compression are the result of a local or a general irritant within the cranial cavity. That this principle found a happy application in the present case is evidenced by the great serous effusion which daily permeated the dressings.

7. We wish to emphasize the safety of trephining near the base of the

skull, the ease of arresting violent hemorrhage from the sinuses of the dura mater, and the importance of drainage in all cases of cerebral injury.

8. To our knowledge there is no recorded case of trephining as low in the temporal region and removal of clots from the base of the brain.

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## APHORISMS ON JOINT-DISEASES.

BY LOUIS BAUER, M.D.,

Professor of Surgery, St. Louis College of Physicians and Surgeons.

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AFTER studying critically a large number of cases illustrating the different forms of diseases of the joints, I have condensed the salient points thus collated into the following aphorisms:

1. Childhood is more susceptible to joint-diseases than adult life.
2. Early infancy, however, is *almost* exempt.
3. When the supervision of the nursery is withdrawn, and the child allowed to gratify more or less its growing impulses, articular injuries, and with them articular diseases, multiply.
4. Impulsive and venturesome children are more often victims of accident than passive or timorous ones.
5. Articular diseases are more frequent among children in densely populated cities than in rural districts; more frequent in the North than in the South.
6. With the development of judgment and growing experience in the means of self-protection, this class of disease *rapidly diminishes*.
7. After the eighth or ninth year recent cases are rare exceptions.
8. The anatomy of infantile joints favors traumatic derangements.
9. They are endowed with ample provision for repair and reconstruction, if time and rest are vouchsafed.
10. Constant abuse of injured joints advances and intensifies the lesion, and acts as a most potential factor in advancing articular disease.
11. Rest and favorable position are the principal means for the prompt relief of these troubles.
12. The inference is thus sustained that most articular lesions in childhood are of *idiopathic origin*, limited to *one articulation* in their start and termination.
13. The joint-affections of adults are principally of constitutional origin.
14. Hence multiarticular at the start, or successively compromising other articulations.
15. Such lesions are either preceded or accompanied by febrile disturbance of the constitution.



16. Constitutional joint-affections, as a rule, appear and vanish with the constitutional causation.

17. If one or the other of the articular affections passes beyond the final resolution of the latter, its provocation is of a strictly idiopathic character.

18. Tubercular bacilli may lead to varied local manifestations, and among others, may involve articular structures.

19. As a rule, tuberculosis is primarily constitutional, and therefore multiarticular in its manifestations.

20. The numerical preponderance of tubercular joint-affections, insisted on by Professors Koenig, Fedor, Krause, and others, is more than problematic.

21. Logic and clinical facts disprove the assertion.

22. Most joint-diseases are amenable to treatment and eventual cure, at least in our longitude.

23. The main remedies to be relied on are position and physiological rest of the affected articulation by mechanical appliances.

24. Mechanical appliances cannot cure constitutional and infectious diseases.

25. A specific against tuberculosis does not exist.

26. If a slight articular contusion can serve as a point of attraction (*locus minoris resistentiæ*) for the colonization of the tubercular bacilli, the wound of an arthrotomy must necessarily furnish a magnified field for the parasite.

27. The eradication of one tubercular focus by operative measures cannot affect a constitutional disease of this kind.

28. Genuine tuberculosis will soon establish other foci (or remanifest itself), as in fact it does.

29. The cures claimed and effected by operations are obviously based on error in diagnosis.

30. The *only* admissible proof of tuberculosis is its *bacillus*.

31. We have the authority of Professor Klebs on our side that there is no *discernible difference* in the structural disintegration caused by tuberculosis and by syphilis.

32. Numerous authorities agree with us that the most variable inoculations provoke miliary tuberculosis of serous membranes.

33. Caseation of pus is no pathognomonic evidence of tuberculosis, for pure pus will invariably become caseated if left undisturbed, provided only that conditions favorable to the resorption of the liquor puris be present.

# CLINICAL LECTURES.

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## *TREATMENT OF SYPHILIS.*

CLINICAL LECTURE DELIVERED AT THE HÔPITAL ST. LOUIS, PARIS.

BY PROFESSOR FOURNIER.

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THE treatment of syphilis by the ingestion of the mercurial salts represents the true therapeutical method. This is the treatment usually adopted by the great majority of practitioners. Does this mean that it is free from all danger? Certainly not. The reason of the preference accorded to this mode of treatment is simply that it is the easiest. As to its drawbacks, it has perhaps more than other drugs. Stomatitis, gastralgia, and a baneful influence over the general nutrition result, although in a majority of the cases these difficulties can be prevented by proper medical supervision. Some of our patients have from time to time a little diarrhœa or their gums may be slightly affected, but this is, after all, a slight trouble.

If we are to judge this method by comparison with others, we find that it has none of the difficulties, such as pain, nodes, and abscesses, which are seen in the employment of the subcutaneous method. It also is exempt from the profound and serious attacks of stomatitis observed in the use of mercurial ointment by inunction. You have seen in our wards a patient who had albuminuria and syphilis. After being treated by the rubbing method he had a severe stomatitis that developed gangrene.

We give our preference to the internal administration of mercury because it is practical. What is more simple than to take a little pill, or even a teaspoonful of a solution, twice a day, without any special preparation or any particular apparatus? Is there anything to compare with the trouble of making inunctions? or the difficulty of hypodermic injections? or of intricate fumigations? In fact, we must in medicine take account of the exigencies of modern life, and therefore I have chosen the method of ingestion. The pleasantest and easiest method of administration is a point not to be neglected in the employment of a drug, because the treatment must be continued for a long time, even when the disease is latent. How can you hope that your patient will carry out the necessary treatment when he is impressed with the difficulty of using your method? If it bothers him he will drop it.

However, I do not advise you to be exclusive, for the best of methods



may and should be given up under certain conditions. For instance, if you have a dyspeptic, or a patient who gets diarrhœa easily, you should resort to injections or inunctions. You may also have a person subject to malaria, or a poor, debilitated man who lives only by the little food his stomach will digest, and here also you should not use the stomach route but the excellent subcutaneous one. Again, you may have a nervous patient who needs bromides or tonics, and is taking them by the stomach; then treat his syphilis by the other methods. So, while I recommend the ingestion as an excellent method of giving mercury, which should be continued during the storms as well as during the calms of the disease, still I do not ask you to adhere to it exclusively.

To come to the practical question, What are the methods of treating syphilis? I can say that they are very numerous: everything that the chemists have invented has been tried, but the two great ones are the bichloride and proto-iodide of mercury. The metal itself is used in the "pills of Barbarossa," so called from the name of the famous Algerian corsair who sent them to King François I. when he sadly needed them. It is also the metal in its natural state that is used in the well-known Sédillot's or "blue pills." As to calomel it is a most detestable antisyphilitic. It gives diarrhœa and brings about ptyalism. It is found in Plummer's pills. The acetate of mercury, under the name of "Keyser's dragées," once enjoyed great reputation, owing to the fact that Languet spoke of them in his interesting novel, "The Cacomonade." Lately we have had the peptonate, the tannate, and the salicylate. The first two are not definite preparations, and some fifteen kinds can be made of the second, no two of them alike. The salicylate seems to be better, but in reality the bichloride and the proto-iodide are the important ones that we shall now study.

Corrosive chloride of mercury is an old drug. Boerhaave and Van Swieten were its godfathers. It is the base of Van Swieten's liquor and Dupuytren's pills. The French preparation of the first contains water nine hundred, alcohol at 80° one hundred, and corrosive sublimate one centigramme; so it is a one-thousandth solution. The real Dupuytren pills are composed of corrosive sublimate one centigramme (one-sixth of a grain), extract of opium two centigrammes (one-third of a grain), and extract of guaiacum four centigrammes (two-thirds of a grain). Biett produced the proto-iodide, and Ricord's famous pills contain proto-iodide of mercury and lactucarium of each three centigrammes (half a grain), extract of opium one centigramme (one-sixth of a grain), confection of roses a sufficient quantity. They are both excellent drugs. Which shall we choose? Well, there is no exclusive choice to be made. There are special indications, however, which you will see from the parallel I shall draw of them, and which has three different points of comparison,—first, the ptalic action; secondly, the action on the digestion; thirdly, the therapeutical action.

As to the first, there is an old legend that corrosive sublimate will not affect the mouth, but, like many such old stories, this one is not true. In

small doses the bichloride does not affect the gums, it is true, but if you give as much as from three to five centigrammes it will. However, I must admit that it has not so pronounced an action on the mouth as other preparations, and therefore stomatitis is less frequent. It might be preferred in cases with caries of the teeth. On the other hand, the proto-iodide is irritating to the gums, but much less so than frictions with mercurial ointment. What is the dose that causes stomatitis? In answer to this question let us first throw out the exceptions. Two or three centigrammes will produce it in certain subjects; while, on the other hand, fifteen centigrammes (two and a half grains) in the first week, thirty centigrammes (five grains) in the second week, and forty-five centigrammes (seven grains) in the third week have been given and were well supported. There is one fact in regard to this matter that I must first speak of; that is the difference of toleration of this drug in men and women: the latter are more susceptible. This is rather surprising, as women keep their mouths and teeth in better condition than men do, and, as a rule, they do not use tobacco. Nevertheless, they cannot support the proto-iodide as well as men. The following conclusions have been found to hold good for men. First, doses of five-sixths of a grain cause no bad effect, as a rule. Second, in nine cases out of ten, one and one-third grains can be used. Third, one and two-thirds grains are often well supported (when great care is taken of the mouth). Fourth, even two and a half grains are fairly well supported by men. We may, then, adopt one and two-thirds grains per day as the regular dose, and sometimes even two grains. In women five-sixths of a grain may be employed, but even this dose will give them a sort of neuralgia, or dento-gingival affection, that may be a hyperæsthesia of the teeth. A dose of one and two-thirds grains per day is too much for a woman, and larger doses are certain to bring about stomatitis. For certain serious lesions, such as iritis, etc., we must, however, use large doses, but with great care, advancing and retreating according to the effect on the mouth. To sum up: for man the dose is one and two-thirds grains, and for woman one and a sixth grains per day.

Now as to the gastro-intestinal toleration. It will not, I trust, teach anything new to say that corrosive sublimate is a poison, but notice this fact: when it does poison, it *acts on the stomach and intestines*. When sublimated injections are used in a woman during confinement, they sometimes cause intestinal ulcerations, or, more frequently, cramps and colic. In medical language, they cause a gastralgia. I remember that at the Lourcine Hospital the women called Van Swieten's solution *casse-poitrine*, or *break-chest*. As a rule, then, the corrosive-sublimate preparations are not well supported.

As to the proto-iodide it is different. It does not irritate the stomach, but it does irritate the intestines, causing a little diarrhœa. This is not very important; many patients find that the remedy does not move them enough. Now and then it may cause considerable diarrhœa, but this is



often owing to certain kinds of food, to which strict attention should be paid, the diet regulated, and the trouble will then cease and the drug may be continued. This, then, is the least irritating drug, and, though some think differently, I believe that it has the best effect on syphilis. It cannot be disputed that with it the dose can be raised much more safely than with the sublimated solutions. To men we give without difficulty three and two-thirds grains per day, while the bichloride soon stops us with cramps, etc.

To sum up the advantages and disadvantages: with the sublimate solution, no ptyalism, but gastric intolerance; with the proto-iodide, ptyalism but gastric tolerance. As to the therapeutic effect it is more or less equal, with a slight advantage in favor of the proto-iodide, as we can readily increase the dose.

The practical outcome of our study is that we should not exclude either of these valuable drugs, but give one or the other as needed. For instance, if the patient's mouth is in a bad state, give the *hydrargyri chloridum corrosivum*. To another, who is susceptible as regards his stomach, give the proto-iodide. When there is no special indication give the proto-iodide, which is the better tolerated.

We have now to ask three important questions: first, what form shall we use? second, what dose? and, thirdly, when and how shall we cause their absorption? Van Swieten's liquor is a good preparation, but it must not be given pure: combine it with some syrup and a little rum, or prescribe it in an infusion of tea or mint, or even in milk, so that its metallic taste will not be noticed. I prefer pills; Dupuytren's are good, but the *guaiaacum* can be omitted and the other ingredients administered as follows:

R Hydrargyri chloridi corrosivi, gr.  $\frac{1}{12}$ ;  
 Extracti opii, gr.  $\frac{1}{8}$ ;  
 Misce et fiat pil. no. i.

Ricord's pills of the proto-iodide contain sixteen milligrammes of opium each, or half a grain in two pills, which is too much; it is better so to modify them that there shall not be an excess of opium, as in the following prescription:

R Hydrargyri proto-iodidi, gr.  $\frac{xvi}{3}$ ;  
 Extracti opii, gr.  $\frac{iii}{3}$ ;  
 Glycerini, q.s. ut fiat pil. no. xx (mollis).

Sig.—Give one pill per day at first, and increase by one-half pill to two pills after a week.

Terminate the prescription by saying always "*soft pills*." The reason is that mercurial pills get hard very rapidly, and in a short time they are no longer pills but *shot*, which can be heard shooting against the *pot de chambre* in the morning, they being no longer digested or absorbed, but eliminated with the *fæces*. I have frequently been surprised to find that a case did not respond to the mercury even when I increased the dose. Suspecting

that the cause of failure was hardness of the pills, which passed like pear-seeds, I simply added a few drops of glycerin to the pills, and they acted at once.

A second interesting question is, When shall these pills be given? An old custom is to give them morning and evening, but it is better to give them just before or even during a meal. It is quite possible to provoke a gastralgia by giving them between meals. If women do not support the pill taken in this way, let them cut it in half, and take one-half of it at the two principal meals.

As to the dose on which success depends, you must not be afraid. What is the most useful quantity? I regret that I have to say that most physicians keep below the proper quantity, as I learn in consultations I have with them. Let me give you an example. I was asked to see a fine, big fellow whom I found with a tubercular syphilide, and who three years before had been treated for syphilis for a few months, during which he took only five-sixths of a grain of proto-iodide of mercury per day, which for such a big man was nothing at all, so that during three years he had his syphilide. I have notes of another case that was treated with a sixtieth of a grain of corrosive sublimate per day, and now has phagedæna. So you see that many patients are not treated properly. This is a sort of "disguised expectation." It is a delicate matter, I know, absolutely to fix a dose of mercury in syphilis. *There is no exact dose*; the curative dose of corrosive sublimate for a man is about half a grain; for a woman it is one-third of a grain; below this the drug has no active effect on the disease. The dose of the proto-iodide is larger,—for a man about two grains per day, and for a woman one and a third grains. This is the most efficacious dose, capable not only of meeting all the important indications but also of preventing symptoms that might arise in the future.

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## A CASE OF SUPPOSED TUMOR OF THE BRAIN.

CLINICAL LECTURE DELIVERED IN THE MONTREAL GENERAL HOSPITAL.

BY R. L. MACDONNELL, B.A., M.D.,<sup>1</sup>

Physician to Montreal General Hospital; Professor of Clinical Medicine, McGill University.

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THIS patient, who has been in my wards since the 30th of September last, you have repeatedly had opportunities of observing, as he lay in bed when we made our visit as well as on several occasions when he was the subject of practical clinical demonstration. The symptoms presented enabled me to form no other opinion than that they were due to the presence

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<sup>1</sup> Since deceased.



of a tumor in the brain, and I propose this morning to discuss more fully these symptoms and their significance.

The symptoms of brain-tumor are divided into (1) general and (2) local. By *general* we mean those that are present in all growths irrespective of their situation. By local (or focal) we mean those that point to the part of the brain specially affected. These we must consider one by one.

#### GENERAL SYMPTOMS.

In most instances the general precede the local symptoms. In both the onset is gradual, and in both the severity of the symptoms is in no way proportionate to the size of the growth; in fact, there are rare cases in which general symptoms are absent.

*Headache.*—The characters of the headache presented in this case of George G., aged fifty, are as follows: Pain preceded all other symptoms, and, having begun three years ago, was for a year the only symptom present, when convulsions began. The pain was of a continuous character, with paroxysms of very great severity occurring, when it was at its worst, as often as fifteen or twenty times a day. The site of the pain was the front and back of the head, and it did not affect one side more than another. He described it as being of a “bursting” character. It was severe at night, prevented sleep, and often awakened him, sometimes as many as two or three times in the same night. After a paroxysm had lasted a short time he began to suffer from nausea, which was soon followed by vomiting, with relief to the pain. The movements of the body intensified the pain; cough and all expulsive efforts had the same effect. In connection with the problem of the localization of the tumor, it is a significant fact that the patient suffers from a paroxysm of headache whenever he lies upon his left side.

These are the characters of the headache from which this patient has been suffering, and they are those commonly observed in cerebral tumor. Some patients describe the pain as tearing, or stabbing, or boring. It may be general, or, as in this case, felt in the front or back of the head, or both, or it may be unilateral. Last winter we had in the clinical wards two cases of brain-tumor, in both of which there was headache confined to the side on which the brain-tumor was supposed to exist, and in both of these cases there was tenderness on percussion. This last we have been unable to elicit here. As a rule, the locality of the headache has nothing to do with the locality of the disease, except in some cases where the tumor is on the surface. When the disease is below the tentorium it seems to pass down the neck. Of this I recently met with an interesting clinical illustration, in the case of an elderly gentleman, who died under my care, with very severe hemorrhage into and around the medulla oblongata. In addition to the occurrence of coma, and a sudden diabetes, symptoms exceedingly interesting, but which have no bearing on the present case, he suffered from the most intense pain directly under the occiput.

*Optic Neuritis.*—Optic neuritis is not a focal but a general symptom. In this case it was from the first present in both eyes. As a rule, it occurs in about three-fourths of the cases, and, like headache, its presence has no bearing upon the locality of the growth. Hence I say it is not a focal symptom. Neuritis is found when the tumor involves the meninges, as well as when the cerebrum is the seat of disease, but it is said (Gowers) to be less frequently met with when the growth is in the membranes over the convexity and merely compresses the brain than when the brain-tissues are actually invaded.

Optic neuritis is not produced by intracranial pressure, and its intensity has no relation to the size of the tumor. It may be present with the very smallest tumors, and may be absent when the tumor is as large as a fist.

Optic neuritis is not commonly an early symptom, inasmuch as a tumor may cause symptoms for a considerable time without affecting the optic disks, and neuritis may suddenly appear in the course of a case of tumor when previously it had been absent, and it may run on to atrophy while the tumor steadily goes on its course, but more commonly it increases as the tumor increases. It would appear that the optic changes in this case were very rapid. In the first week optic neuritis was detected in both eyes, and vision was reported to be normal. Since then he has complained of mistiness of vision, and now he is scarcely able to see. He has also been the subject of various visual disturbances from time to time. When the headache is severe, he suffers from double vision, one image being above the other, and the dimness of vision seems to affect the right eye more than the left. A few days ago he told me that he thought he would be able to walk quite well, but that he could not see to guide himself. I am afraid that the neuritis is taking an acute form; in fact, an advanced degree of atrophy is already present.

*Mental Disturbances.*—In spite of all the suffering, his mind has been clear throughout, and you may notice now that he has given rational answers to all the questions I have put to him. Mr. Hamilton, the clinical clerk, who has paid great attention to the case, and who has furnished us with a very valuable clinical report, therein tells me that his memory is very good and that at no time was his mind obscure. But, as a rule, tumors tend to produce mental impairment, and in some instances to such an extent that it becomes necessary that patients so afflicted should be confined in an asylum. It is stated that brain-tumors are not uncommonly found at the autopsies of persons who have died in lunatic asylums. During my term of service as demonstrator of anatomy the bodies of a large number of lunatics were dissected,<sup>1</sup> but I cannot recall any instance of our having

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<sup>1</sup> According to the Anatomy Act at present in force in the Province of Quebec, the bodies of all persons who have died unclaimed by near relatives, in public institutions which receive government aid, are handed over to the medical schools. This law has been in force seven years, and the schools have been well supplied.



found brain-tumors, though many other interesting specimens were collected. We found, for instance, springing from the sella turcica, a tumor of bony origin, which was as large as a tennis-ball, but the subject had had no brain-symptoms. Previously to his appearance in the dissecting-room he had been a street beggar, the double exophthalmos produced by the tumor exciting much sympathy.

Occasionally brain-tumor will produce mental symptoms without any of the general or focal symptoms above enumerated. When I was a clinical clerk in this hospital, I reported a case of brain-tumor which was admitted in 1875 under the care of Dr. Ross. The patient was an old woman, and it was supposed that she was becoming insane. She became irregular in her habits, and assumed a sleepy, stupid air to such an extent that some of her friends thought she had been drinking. Moreover, she evinced a desire to steal and secrete articles of no use whatever, and on one occasion she had set her bed on fire. After her admission to hospital she became very difficult to manage. She insisted upon sleeping on the floor, she stole all things within reach, hid them in her bed, and at times was noisy. Weakness of the left leg was noticed on her admission, but a decided right hemiplegia occurred shortly afterwards. She died in a comatose condition, after being in hospital about a fortnight, and a small tumor (a glioma) was found under the outer lateral half of the corpus striatum on the left side.<sup>1</sup>

*Vomiting.*—Vomiting in the case before us began about a month before admission, and it coincided in point of time with the acme of the paroxysm of headache, and when the patient had vomited freely the pain began to disappear.

In all cerebral tumors vomiting is present to a greater or a less extent.

I cannot say that giddiness has been at all a prominent symptom. You will observe that, as I have been speaking to him, there is a peculiar slowness and deliberation about his speech, which is not an uncommonly observed feature in cerebral tumors. In some instances the syllables are cut and separated, and in tumors involving the speech-centre there is distinct aphasia.

#### [FOCAL SYMPTOMS.]

*Motor Disturbances.*—At one period we thought we detected some slight paralysis of the right side of the face. It was indistinct, however, and I could not make up my mind as to whether it existed or not. At that time he complained of accumulation of food in the right side of the mouth, but possibly this might be due to other causes.

Convulsive attacks form the most striking feature in the clinical history of the case. They began to be experienced about a year after the onset of the headache, were first noticed in the left arm and leg, and were said to be followed by loss of power. He says that he used to feel power-

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<sup>1</sup> Canada Medical and Surgical Journal, vol. v. p. 113.

less after the convulsive movement had lasted a few moments. This may have been the result of the movement itself, and not of any loss of power in the side involved. At first these attacks were not very frequent, occurring at intervals of about a month, when they became gradually more frequent, until recently they have been occurring almost daily, and even hourly. His wife, who has frequently witnessed these seizures, tells us that no loss of consciousness occurs, that there is no involuntary micturition, that he has suffered from no injury, and that the tongue has never been bitten. There is no history of an aura.<sup>1</sup> The fits have been becoming more prolonged; their ordinary duration of late is said to be fifteen or twenty minutes. In spite of these attacks, he has been able to work, and has recently suffered from a fit of unusual severity, as a result of which there was great muscular weakness, which necessitated his taking to bed; this was shortly followed by another equally severe attack, and he was then admitted to the hospital.

Though he complained of slight tremblings in the left arm, there was no convulsive movement noted until the morning of October 12, about a fortnight after he had been admitted to the hospital, when, while walking from the bath-room, he suddenly fell upon his face, and remained upon the floor for some moments powerless. In the night-nurse's report, which I am quoting, it is stated that he did not lose consciousness; the head was said to be moved backward and forward repeatedly, and the eyes to be upturned. The whole spasm lasted about five minutes, and was followed by retching, grinding of the teeth, and soon after profuse sweating. Some fifteen minutes after he had been put to bed he complained of intense burning pain in the right side of the head. At my visit at 11 A.M. he was lying on his left side. He habitually lies on the right, and says that if he were to turn to the left it would bring on a paroxysm of headache. He was restless and distressed. The breathing was deep and slightly stertorous, the face somewhat flushed. During the day it was said that since the fit there had been occasional slight movements of the left arm and leg. At eleven o'clock that night another seizure took place. He had been semisomnolent all day. In this attack the head movements were specially noticeable. During the night other seizures occurred,—namely, at 1 A.M. and 2 A.M. on the following morning. After each of these attacks the patient complained of burning pain in the right side of the face. Similar attacks occurred on the 20th, 21st, 23d (the convulsions on this day were specially noted as having commenced in the left leg), 25th (left leg, arm, and head movement), 27th, and 29th of October. In the intervals between these attacks there was intense headache, with

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<sup>1</sup> I succeeded in finding this woman a few days ago, and in repeating to me the history of her husband's illness she contradicted herself so often that I place no reliance upon the history as given above. She insists that the fits were just as severe before he entered hospital as they have been since, and that in many of them involuntary micturition took place.



paroxysms of burning pain in the right side of the face. In the beginning of November the fits were frequent. On the 1st and 4th of that month left-sided movements were particularly noticed, with constant headache, and intense neuralgia of the fifth nerve, shown by tenderness on pressure at all three facial foramina. On the 5th of November there were most severe spasms, beginning in the left arm and becoming general, and occurring nearly every hour of the day. It was noted on the 6th of November that in one of the fits urine was passed involuntarily. In a spasm which occurred on the 8th of November it was observed that there was no local commencement, but that the spasm was general from the start.

At this stage it would not be unreasonable if you were to ask me what we were doing for him in the way of treatment, for it appears that whatever was being done was singularly ineffectual. On his admission he was given iodide of potassium, beginning with small doses, which have been increased to eighty-five grains three times a day. During this period no improvement whatever was made, and at the time that he was taking the largest dose the convulsive attacks were at their very worst. On the 11th of November I changed the treatment, stopped the iodide altogether, and ordered inunction of mercurial ointment. The practice of administering mercury by inunction is very old, and is coincident in point of time with the first administration of the drug. It was used in this way before it was used by the mouth, and the practice has borne the test of time. The advantages are these: the action of mercury is attained to its full extent and the system becomes mercurialized in a mild and equable manner with little or no disturbance of the stomach and bowels. The effect is rapid. Now, there is a right and a wrong way of administering mercury by inunction. Every day one drachm of the ointment of mercury of the British Pharmacopœia is gently rubbed into an area of the body over which the skin is thin, such as the axilla, the inner side of the thigh, or the inner side of the upper arm. At each inunction it is well to change the site. When the ointment is to be applied, the parts should be thoroughly washed with soap and water, so as to remove all greasy particles from the skin, and the rubbing should be done either by the patient himself or by a nurse, who should be provided with india-rubber gloves, lest she should herself become mercurialized.

It was on the 11th of November, then, that we began this change in our treatment. On the 12th the patient sat up all night, being afraid to lie down, lest the horizontal position should bring on a convulsion. He slept in this position by snatches until about 1.45 A.M., when the night-nurse found his breathing to be very irregular, and on attempting to wake him found that he was unconscious. In this state he remained for about an hour, then gradually regained consciousness, and at five in the morning there were more spasms.

*November 13.*—No spasms to-day; less pain.

*14th.*—Several spasms in the night; in one of them there was involuntary micturition.

15th.—Slept fairly well last night.

19th.—Has been much more quiet during the last few days. Rested well at night. Pain in the face much relieved. The hypodermic injection of morphine which he has been given for the last four nights is now discontinued.

20th.—No pain complained of.

21st.—No pain to-day, except to a slight degree in the distribution of the second and third divisions of the fifth nerve.

28th.—For the last week he has felt very well and has been free from any convulsive attacks. There is still slight pain in the right side of the face. Some of his teeth became loose to-day, and there was an unusual flow of saliva. No spasm whatever has occurred since November 17.

*Sensory Symptoms.*—Common sensation was entirely unaffected, with the exception of the area supplied by the fifth cranial nerve. I have alluded to the pain and burning in the right cheek. In addition to this, he suffered from pain in the teeth of the right side of both jaws. This neuralgia of the fifth did not occur until after he had been in hospital a fortnight, and it was described first as a burning sensation and afterwards as severe pain. It was entirely confined to the right side of the face, and the parts which were specially painful were the outer canthus, the right eyeball itself, the right cheek, and the teeth and gums. Pain was elicited on pressure over all three of the foramina by which the divisions of the fifth nerve leave the skull. This neuralgia of the fifth nerve is almost constantly present in tumors of the middle fossa, is frequent in tumors of the pons, and occasionally present in tumors elsewhere. As a rule, in such cases both the sensory and motor roots are affected, sometimes the sensory alone, rarely the motor alone, and here it is probable that the irritation caused spasm of the motor branches of the nerve, for in one of the fits it was specially noted that there was grinding of the teeth, and you are aware that the motor branches of the fifth nerve supply the masseter, the temporals, and the pterygoid muscles. All divisions may be involved. We may also explain the presence of neuralgia of the fifth as being due to a second tumor, and at the time when this patient was at his worst, and when operative procedures were discussed, the possibility of the presence of a second tumor was taken into consideration.

So far, then, we have dealt with the symptoms which belong to the nervous system. Let us see what other points there are in the case which may help in strengthening us in our diagnosis.

The temperature for the last nine weeks has generally been subnormal, from a little above 97° to a little above 98° F., and never during our observations has it reached the normal line. The evidence afforded by thermometry, therefore, is negative.

The pulse, which is generally said to be slow in brain-tumors, never exceeded 100, and was generally at from 72 to 80. Shortly after the first fit he had in the hospital, it was noted at 52 at eight o'clock in the morning, and at eight o'clock at night it was 96, at which it remained for some weeks.



On the 4th of November, when the convulsive attacks were at their worst, it was noted as being 54 at eight o'clock in the morning. This was one of his very worst days, the spasms being violent and occurring hourly. On the following day it went back to 90. Since the 20th of November his pulse has been below 70 continuously, and sometimes as low as 50 or 58. It would appear, then, that the general observation that in cerebral tumors the pulse is slow, is quite correct. With the growth of the tumor the pulse has become slower, and on two occasions at least, when the effects of the tumor were at their worst, there was a remarkable slowing. More striking results might have been regarded had we been on the watch for the connection between slow pulse and convulsions. It was only in reviewing the papers in connection with this case, and on reading over the carefully-prepared notes of the day- and night-nurses, that I noticed this occurrence.

Beyond those already mentioned no other symptoms referable to the nervous system were present.

The physical examination of the lungs and heart was negative. The bowels were constipated throughout. There was no evidence of disease in any abdominal organ. The examination of the urine was negative.

#### DIAGNOSIS.

We must now face the difficulties of the diagnosis, and I shall adopt the plan followed by Gowers, who breaks the problem into four parts, in this fashion: 1. Is there organic disease? 2. Is it a tumor? 3. Where is it situated? 4. What is its nature?

1. Is there organic disease? We say yes. Of the general symptoms which are of less importance than the focal symptoms, the two most important were constantly present,—namely, vomiting and optic neuritis. Headache and general convulsions are said not to be of such importance, since they occur in other conditions. This headache was suspiciously indicative of organic disease, and presented all the characters of headache occurring under that condition. The fact of its occurring during sleep and keeping him awake, of its gradually becoming worse and being wholly uncontrolled except by mercury, points most strongly to an organic origin. The combination of headache with optic neuritis is likely to occur in only three other conditions,—namely, anæmia, kidney-disease, and lead-poisoning. The first two are easily excluded. Lead may produce headache, optic neuritis, delirium, and convulsion; but it is almost invariably preceded or accompanied by other evidences of lead-poisoning. Local commencement “suggests organic disease, but does not prove its existence.” The history of the case, and the other symptoms, especially the focal ones, must also be taken into consideration.

2. Is the disease a tumor? We have decided that it is an organic disease, and organic diseases are practically divided into those whose onset is sudden and those whose onset is gradual. We can exclude the sudden or-

ganic diseases, which would include hemorrhages and acute softening, and we have merely to discuss organic diseases which are gradual, such as general paralysis, chronic cerebritis, abscess, sclerosis, local nerve-degeneration, and meningitis.

Now, in general paralysis such a combination of symptoms as headache, optic neuritis, and vomiting does not occur.

Chronic cerebritis presents no focal symptoms, and is a very rare disease.

Abscess may produce symptoms closely resembling tumor: practically an abscess is a tumor. Headache, vomiting, and optic neuritis are common, but optic neuritis is of much more frequent occurrence in tumor than in abscess. Other focal symptoms are rare in abscess, and the progress of abscess is rapid. Pyrexia is a very prominent symptom in abscess. Lastly, cerebral abscess does not occur without a cause, and that cause is generally evident, and the most common one is disease of the bones of the skull, generally of those of the ear.

Syphilitic meningitis is of all the diseases the most difficult to distinguish from tumor, and in fact it is often practically indistinguishable. There are no focal symptoms in syphilitic meningitis, excepting those that arise from the implication of the cranial nerves which are interfered with as they leave the cranium.

### 3. Where is the tumor?

Now, what are the facts we have to guide us? 1st. Convulsions began in the left leg, arm, and hand, and subsequently, as the case grew worse, extended over all the body. 2d. There were movements of the head and neck. 3d. There was irritation of the sensory branches and possibly of the motor branches of the fifth nerve.

The first two of these symptoms point to a portion of the motor area on the right side, near the middle line of the skull, the portion mapped out in the chart before us, and it is possible that the disease involves the upper portion of the motor area for about two-thirds of its extent, since the face-centre, which occupies, roughly speaking, the lower third of the motor area, has not been attacked.

### 4. What is the nature of the tumor?

I shall write on the board the tumors commonly met with: 1, glioma; 2, sarcoma; 3, syphiloma; 4, tubercle; 5, carcinoma.

Now, we may strike out at once sarcoma and carcinoma, on the ground (1) that there are no evidences of sarcomatous or carcinomatous growths elsewhere, and (2) that the case has lasted too long.

Let us see what evidence there is in favor of tubercle, syphiloma, or glioma.

First, is it tubercular? Tuberculous tumors are rarely present without distinct evidence of tuberculosis elsewhere, and in this case we have no such evidence. This rule, however, does not apply in the case of children, in whom tubercle is found primarily in the brain. Last winter we had a case



at this clinic in which a tubercular tumor of the brain was found, but the patient was also the subject of apical disease, and had in addition tuberculosis of the testicle. The family history of our patient here tells us that his father died at eighty, his mother is still alive, one brother died of consumption at forty-five. He has eight brothers and sisters alive and in good health, so you see we can scarcely find anything to substantiate the history of tuberculosis.

Secondly, is it a syphiloma? He denies ever having had syphilis, but in nervous cases, as well as in all others, the denial of syphilis is unimportant when compared with the evidences afforded by the physical examination of the patient or by the close cross-examination into his history.

There are two points in favor of his being the subject of syphilis.

1st. By his present wife, to whom he has been married some five years, there have been no children except one born dead, at full term, and there have been three miscarriages. By his first wife there were no miscarriages and she had four children, so that it is not improbable that the syphilis was contracted when he was a widower.

2d. There is no doubt that the glands in the groin are enlarged and quite hard.

We cannot, therefore, on evidence like this, exclude syphilis.

Does the seat of the tumor afford us help? We have decided that the choice lies between glioma and syphilis. Tubercle and glioma are fond of the cerebellum, while syphilis keeps clear of it, and, moreover, we suppose that this tumor is cortical, and cortical tumors are very likely to be of syphilitic origin. Glioma does not usually affect the surface.

Lastly comes the very weighty evidence afforded by the results of treatment, which, added to the evidence in favor of syphilis already given, makes the diagnosis of organic syphilitic disease as certain as an ante-mortem diagnosis can be. It is difficult to imagine that such a marked change in the symptoms could be a mere accident, and not dependent on the change of treatment, and, although the effects of the mercury have been most striking, yet I do not wish you to go away from this room with the idea that this patient is cured. All we can say is that within the last fortnight the neuralgia of the fifth has ceased and that no convulsions have occurred. It is not improbable that these symptoms may return at any time. We shall continue the administration of mercury, however, for a considerable period, suspending it from time to time when the gums begin to be touched.

P.S.—*December 20.*—A slight convulsion occurred last night.

*January 12.*—The progress of the case has been fairly satisfactory. Very few fits have occurred since the lecture was given. The neuralgia of the fifth is no better, and is only controlled by morphine; antipyrin has no effect upon it. I have been able not only to find out that he had syphilis, with rose-rash, falling of hair, etc., but also to fix the date of the

initial lesion. The rash broke out at the time of the small-pox epidemic in the autumn of 1885, and he was therefore suspected of having concealed an attack of variola.

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## *AURAL THERAPEUTICS: 1. HEAT.*

CLINICAL LECTURE DELIVERED AT THE COLLEGE OF PHYSICIANS AND SURGEONS,  
NEW YORK.

BY ALBERT H. BUCK, M.D.,

Clinical Professor of the Diseases of the Ear, College of Physicians and Surgeons, Medical Department of Columbia College, New York; Consulting Aural Surgeon, New York Eye and Ear Infirmary.

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GENTLEMEN,—The present brief course is designed to furnish you with a sort of analytical catalogue of the remedies and remedial procedures which are most commonly employed in the treatment of diseases of the ear. This instruction is intended to supplement that which you have received from the chief of clinic, Dr. Huntington Richards, in practical diagnosis.

Of all the therapeutic agents which we possess for the relief of pain in the ear, heat is by far the most valuable. It relieves this symptom not so much by dulling the sensibility of the nerves as by quieting the source of irritation of these nerves,—viz., the inflammation of the middle ear or of the external auditory canal. In this respect, therefore, it is far preferable to opium, whether administered internally or dropped into the ear in fluid form, to cocaine used as a local application, or to any of the newly-introduced anodyne remedies.

While heat is particularly useful in painful inflammations of the middle ear, which are the source of by far the larger number of earaches encountered in practice, it is also useful in other conditions of the ear. Thus, for example, it may be employed to advantage in furuncular inflammation of the external auditory canal, in sympathetic or reflex neuralgia, and as a vaso-motor stimulus in sluggish congestion of the middle ear.

Of the two, moist heat or dry heat, the former is much to be preferred. To secure successful results, however, a great deal depends upon the manner in which moist heat is utilized; and I may therefore be permitted to set forth somewhat minutely the details of poulticing an ear. I feel myself specially called to do this because I have observed that many physicians seem to have very little faith in the efficacy of this procedure. But since I have had the opportunity of observing in what an imperfect manner this valuable remedy is generally employed, I confess that I no longer wonder at the low estimate which they are disposed to place upon it.

The best material for a poultice is flaxseed meal. A double handful of this is to be mixed with a little water in a porcelain-lined or “granite-



ware" dish, and stirred over a fire until the mixture is thoroughly heated and has the consistence of rather soft dough. The unpleasant odor of the flaxseed may easily be overcome by the addition of a tablespoonful or two of powdered slippery elm. When it is sufficiently hot and has reached a satisfactory consistence the poultice mixture is to be transferred to a piece of thin muslin or cheese-cloth, and spread out over an area of about six inches square. The piece of muslin is next to be folded over the hot mass and secured in place by a few basting-stitches. The poultice is then ready to apply to the ear. Before doing this, however, the physician or the nurse should drop or pour into the canal of the affected ear—the head being turned towards the opposite shoulder—enough lukewarm water to fill it completely. Immediately afterwards the poultice should be brought gradually into full contact with the auricle and surrounding region, and over the whole a folded blanket or shawl should be placed, in order that the poultice may retain its heat as long as possible.

It is scarcely necessary for me to add that each one of the three steps described above constitutes an important part of poulticing as an aural therapeutic procedure. The column of water in the external auditory canal conducts the heat of the poultice directly to the middle ear in a more perfect fashion than could a column of air; and without the aid of the shawl or blanket the poultice itself would part with most of its heat in the course of a very few minutes. Even when protected by such a woollen wrap it will retain an effective degree of heat for only twenty, thirty, or at the most forty minutes. After the lapse of this period of time a second poultice should be ready to take the place of the first one; and if in the mean time the water shall have escaped from the ear, a fresh supply should be poured in. By such a succession of poultices the ear may be kept under the influence of an effective degree of moist heat for two or three hours,—or longer, if desired.

Simple as this affair of poulticing an ear may seem to most people, it will be found in actual practice to require the undivided time and attention of one person. This is especially true in the case of a child, in whom it may be found necessary to apply a light unstarched mosquito-netting bandage for the purpose of keeping the poultice in contact with the ear.

The Japanese hand-warmer may be utilized as a means of keeping the poultice at the proper degree of heat. This clever contrivance consists of a tin box about five inches by two and a half inches by seven-eighths of an inch, covered with muslin, and provided with a sliding cover. The source of heat is a finely-powdered charcoal cartridge, which is to be ignited at one end and then shut up within the metal box, the sides and lid of which are freely provided with small openings for ventilation and the necessary supply of oxygen. If the sliding lid is closed tightly, the combustion of the charcoal in the box proceeds at a slow rate, and scarcely enough heat is produced to maintain the poultice at the proper temperature. By experimenting for a few minutes one can readily ascertain just how loosely the cover should

fit in order that the desired degree of heat may be given out by this miniature stove. When it is in satisfactory working order it should be placed, with lid uppermost, in close contact with the outer surface of the poultice, and the shawl or blanket should then be replaced rather loosely over both poultice and hand-warmer. If not allowed to burn too freely a single charcoal cartridge or charge will last for at least two hours.<sup>1</sup>

The question, How long should the poulticing be kept up in any given case? cannot easily be answered at any time, and certainly cannot be answered satisfactorily in the present brief course of lectures. I shall therefore make no attempt to do more than give you a few suggestions, which may help you towards reaching a correct conclusion.

In cases of furuncular inflammation of the external auditory canal, continue the poulticing for two, three, or four hours, and then substitute some form of dry heat for the next few hours; or persevere with the application of moist heat for as long a time as the patient may desire; or, finally, use dry heat alone, if this should prove to be the more soothing of the two. In these cases of furuncular inflammation, no very marked relief from pain need be expected until the abscess reaches full maturity, and then it either breaks spontaneously or is opened by the knife of the surgeon. The poulticing, however, should not be continued after the abscess breaks, as it would then tend to favor the formation of granulation-tissue at the point of rupture, and so delay materially the ultimate healing of the spot.

In cases of acute inflammation of the middle ear our poulticing is done for one of two purposes: either to arrest the inflammation before it reaches the stage in which the integrity of the drum-membrane is threatened, or to hasten its subsidence after the drum-membrane has ruptured or has been artificially perforated. In the former category of cases the poulticing is carried out vigorously for three or four hours, and if by that time the pain has not been relieved, it is safe to draw the conclusion that the hope entertained—viz., that of quieting the inflammation before its products cause excessive pressure upon the drum-membrane and other important structures of the middle-ear—is not likely to be realized. The time for incising the membrane will then have arrived, and the operation should be performed without further delay, in order that all undue intratympanic pressure, which sometimes does so great damage to the ear, may be relieved. After a free opening has been established in the drum-membrane, the poulticing should be resumed, and should be continued faithfully until a free discharge from the ear has been established. This generally occurs in the course of a few hours. Although, as often happens, the incision of the membrane may at once relieve the pain entirely, the rule just stated, in regard to poulticing, should be followed. When a free discharge has been established, poultices are no longer needed.

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<sup>1</sup> These hand-warmers and the requisite fuel may be purchased for a few cents at Vantine's, No. 877 Broadway, New York.



Finally, there still remains to be considered the question of employing moist heat in the treatment of cases which have perhaps long since ceased to be acute; cases in which such symptoms as tenderness and redness of the skin covering the mastoid process, occasional but not severe pain referred to this region, and congestion and infiltration of the soft parts above and behind the *membrana tympani*, are slow to disappear. It is precisely in such cases that the occasional but systematized use of poultices, in the manner described above, often produces excellent results. Thus, for example, in a case which I treated recently, I prescribed two two-hour poulticing sessions every day—one in the forenoon, and one during the evening—for a period of ten days, and succeeded in relieving my patient of all mastoid symptoms.

Prolonged poulticing often renders the auricle very sensitive to the touch, and when this effect begins to show itself, it is a good plan, during the further continuance of the poulticing, to keep the organ wrapped in a piece of thin muslin well smeared with vaseline or any other simple ointment. Before applying the muslin a hole should be cut in it at a point situated opposite to the orifice of the external auditory canal, in order that free access to the latter may easily be gained. Again, in some cases prolonged poulticing seems to promote a relaxed and flabby or lifeless condition of the soft parts in the external auditory canal and middle ear. In such cases, even if some pain still remains, it is better to abstain, at least for a day or two, from the further employment of moist heat. I may say here that I do not remember ever to have seen a case of inflammatory ear-disease in which any seriously harmful results might fairly be attributed to the excessive use of hot poultices.

Theoretically, one would be disposed to believe that the most perfect method of employing moist heat in cases of inflammation of the middle or of the outer ear should be that of the gravity douche, by means of which a stream of warm water might be kept flowing into and out from the external auditory canal for as long a time as might be desired. Practically, however, this method has been found to be inferior to the homelier employment of poultices. Dizziness and sickness at the stomach are apt to develop in adults very soon after the douche is set a-going, and in children a general wetting of the patient and of everything about the bed is a much more probable result than the relief of the pain.

# REVIEW OF MEDICINE.

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## MEDICINE.

IN CHARGE OF JUDSON DALAND, M.D.,

Instructor in Clinical Medicine and Lecturer on Physical Diagnosis and Symptomatology in the University of Pennsylvania, and Assistant Visiting Physician to the University Hospital.

ASSISTED BY

JOSEPH P. TUNIS, M.D.,

Philadelphia.

Ueber die Darmfäulniss bei Nierenentzündung und Icterus. (Intestinal Putridity in Nephritis and Icterus.) By Dr. E. Biernacki. (*Deutsches Archiv für Klinische Medicin*, 49 Band, 1. Heft. 1891.)

This paper represents several months' very careful work, most of which has been condensed into seventeen tables. None but those who have had to do with original work in chemistry can fully appreciate the months of painstaking toil that such tables necessitate. The length of this paper prevents a critical review, but the conclusions which are appended are worthy of careful consideration.

1. The amount of intestinal decomposition depends chiefly upon the diet, and the amount of these products separated by the urine varies greatly.

2. The taking of albumen favored decomposition of the intestinal contents, more especially when the albumen was of vegetable origin.

3. Milk diet decreased markedly decomposition of the contents of the intestines.

4. Ether sulphate is excreted in large amounts in nephritis.

5. The amount of hydrochloric acid in the stomach holds an intimate relation with intestinal disinfection.

6. In icterus intestinal putridity is increased, in part due to the absence of bile.

7. At the close of icterus an increase in the quantity of urine excreted was observed.

8. Calomel has no disinfecting properties in icterus or other cases where there is an abnormal amount of decomposition of the contents of the intestines.

9. The quantity of sulphuric acid is increased in hemorrhagic nephritis, largely due to the destruction of the red blood-corpuscles.



Ein Fall von luetischer Erkrankung der linken Coronararterien des Herzens. (A Case of Syphilitic Disease of the Left Coronary Artery.) By Dr. Paul Palma. (*Prager Medicinische Wochenschrift*, No. 6, 1892.)

After citing four cases, the author describes in detail a case occurring in a man aged thirty-nine, who enjoyed good health until a few days before admission to the hospital, where a diagnosis of croupous pneumonia was made. He died in twelve hours, and the autopsy showed pneumonia of the upper lobe of the right lung. The left ventricle and auricle were dilated, and near the apex there was a slight bulging of the heart-muscle, and microscopical examination showed that it was chiefly composed of connective tissue. The valves, the interna of the aortic cerebral arteries, and the right coronary artery were normal, whereas the left coronary artery in the sulcus longitudinalis anterior for a distance of one centimetre was entirely obstructed, due to arteritis obliterans. Beyond this point for a short distance the artery was narrowed, and then regained its normal lumen. The evidences of syphilis were scars in the inguinal region and the prepuce, with left-sided gummatous orchitis.

From the presence of syphilis and the absence of arterial disease other than of the left coronary, the author logically concludes that the coronary disease was syphilitic in origin.

Zur pathologischen Anatomie des Morbus Basedowii. (The Pathological Anatomy of Morbus Basedowii.) By Von E. Mendel. (*Deutsche Medicinische Wochenschrift*, February 4, 1892.)

The author quotes nine cases where the cervical sympathetic ganglia were free from disease. In one case the right sympathetic was very thin and the inferior cervical ganglion was absent, and in a second case the inferior cervical ganglion was adherent to the surrounding tissues. One autopsy showed changes in the olivary body and the cervical portion of the cord, and in another a hemorrhage into the medulla extending to the restiform bodies was found.

Prof. Mendel's case showed the typical symptoms of exophthalmic goitre. Three years after he suffered a relapse, produced by the sorrow caused by the sudden death of his only child, and died from cardiac paralysis. The autopsy was conducted with unusual care and skill. Examination was made of all portions of the central nervous system as well as of the sympathetics and vagi. Twelve hundred and ten serial sections were made of the medulla.

The principal lesion found was *atrophy of the left restiform body and the ascending root of the vagus*, and increase of the post-orbital fat. Stimulation or injury of the restiform body in rabbits or dogs has produced the symptoms of Basedow's disease, and exophthalmia was observed in thirty-seven per cent. of the dogs.

Ein Fall von Morbus Basedowii geheilt durch eine Operation in der Nase. (A Case of Morbus Basedowii healed by a Nasal Operation.) By Dr. A. Musehold. (*Deutsche Medicinische Wochenschrift*, February 4, 1892.)

A case of exophthalmic goitre in a woman aged forty-five is described, with struma, palpitation of the heart, muscular tremor, anæmia, etc., but no exophthalmos.

Examination of the nose showed a pale mucous membrane, swelling of the posterior half of the inferior turbinated, and, after the use of cocaine, hypertrophy of the posterior end of this same turbinated bone was observed. There were no subjective symptoms, but the patient suffered frequent attacks of acute rhinitis. By the use of the galvano-cautery and liquor ferri albuminati a remarkable improvement was secured in seven days, and shortly afterwards the patient recovered. Two cases of Basedow's disease where the local treatment of a rhino-pharyngitis was followed by recovery are also quoted.

Notes on the Outbreak of Influenza and its Treatment during the Fall and Early Winter of 1891. By Roland G. Curtin, M.D., and Edward W. Watson, M.D. (*Therapeutic Gazette*, January 15, 1892, p. 4.)

These gentlemen prophesied in September that a second epidemic would occur. Their remarks in this paper are intended to supplement the papers already written. In their experience "cerebro-spinal symptoms seemed to predominate, and the disease was less frank in its onset." They report that three cases of true spotted fever recently occurred in Philadelphia. Occipital headache and cervical pains were almost constant symptoms. Meningeal symptoms often yielded to or were substituted by catarrhal diarrhoea, bronchial asthma, or some serious pulmonary disease. Bronchitis and pneumonia were less severe and less fatal in this later epidemic. In the treatment fever mixtures were efficacious, but for the initial symptoms they regard *salicin* as the best and safest remedy. The formula they have found most agreeable is :

R Salicin., ʒiii;  
Sodii salicyl., ʒss; vel  
Phenacetin., gr. xvi;  
Syrup. acaciæ, f ʒvii;  
Olei gaultheriæ, gtt. xv.—M.

Sig.—Teaspoonful every hour or two.

They consider *sulphonal* to be "the best and most efficacious soporific." Nausea was best controlled by one-twelfth of a grain of cocaine every two hours in solution. Catarrhal jaundice was frequently observed, generally in children, but yielded promptly to small doses of calomel and sodium phosphate.

A Study of the Processes which Result in the Arrest or Cure of Phthisis.—Henry P. Loomis, M.D., of New York (*Medical Record*, New



York, January 9, 1892), collates some very interesting and important facts. For the last two years his attention has been directed to the following points while serving as curator of the Bellevue Hospital, where the material for such work is very abundant.

*First.* In what proportion of cases met with on the autopsy-table are found the evidences of cured pulmonary tuberculosis?

*Second.* What are the gross and the microscopical appearances presented by the lungs in these cases, and by what histological changes was the cure effected?

*Third.* In the healed lungs are tubercle bacilli still present?

*Fourth.* How often are the evidences of localized or general adhesive pleurisy found, and what effect have such pleuritic changes had on the pulmonary structure?

In investigating these questions he has become impressed with two facts: A. It is the exception to find perfectly normal lungs, or lungs which are not more or less firmly bound to the chest-wall by old pleuritic adhesions, either localized or general. These adhesions are often so firm that the lungs cannot be removed without tearing away the costal pleura also. B. The number of cases which show traces of extensive tuberculosis in the lungs, yet at the autopsy all evidence of active processes has disappeared and the destroyed pulmonary parenchyma has been replaced by fibrous tissue. Statistics at the Bellevue Hospital prove that thirty-six per cent. of the cases examined showed lungs bound by organized adhesions to the chest-wall. Over *nine per cent.* of the cases showed changes in the lungs characteristic of *healed pulmonary tuberculosis*.

As a result of physical examination during life Dr. Williams, of London, states that a cure was effected in 4.6 per cent.; Dr. Austin Flint gives a percentage of 6.5. Dr. Loomis quotes the result of the studies of four other observers at autopsies. Their percentages of "cured phthisis" were 19, 12.2, 9, and 9.4 respectively. Some handsome photo-engravings which accompany this article add to its value.

**Some Curable Forms of Rheumatic Gout.**—Edward Blake, M.D., of London (*American Journal of the Medical Sciences*, February, 1892), gives a concise account of some interesting cases of this disease. He cites several instances where the rheumatism was of toxæmic origin.

**CASE I.**—An active, vigorous man in the habit of exercising freely every day, with no previous rheumatic trouble, was suddenly stricken with osteo-arthritis in the *sixty-eighth* year of his age. Only one change occurred either in his habits or his surroundings at this time, and that was in his mouth. A badly-fitting dental plate made the removal of his artificial teeth impossible and soon caused a foul and filthy condition of his infralingual area. "Fungating masses of readily-bleeding tissue lay bathed in a stinking fluid, swarming with micro-organisms, mingled with the débris of epithelial cells and of blood-corpuscles, decomposing pus, mucus, salivary salts, and fragments of food." First the middle fingers of both hands were affected. Afterwards the muscles of his arms became painful and atrophied. Then the lower

limbs were affected. His excellent walking powers were gradually reduced to a miserable shuffle.

With the removal of the cause and the institution of proper treatment his condition rapidly improved. "The synovial adhesions were soon broken down by forcible flexion and extension." The œdema was removed by slow, firm, upward electro-massage with a gentle continued current. The affected joints were bandaged firmly at night and never allowed to rest during the day. After fourteen days this gentleman returned home with his joints in a serviceable condition.

Case II. *Osteo-arthritis with urethral erosions.*

Case III. *Osteo-arthritis and xanthorrhœa with uterine polypus.*

Case IV. *Osteo-arthritis with antral empyema.*

Case V. *Gingivitis suppurans and osteo-arthritis.*

Case VI. *Rheumatic gout from grief.*

Case VII. *Osteo-arthritis and arsenical poisoning.*

Other cases of so-called rheumatism can be traced to septic absorption, such as gonorrhœal rheumatism, and the general synovitis following puerperal septicæmia.

In the *treatment* of these cases it is important to remember, first, there may be some cause of toxæmia, either from, within, or without, which should be diligently searched for; second, alcohol or the mineral poisons may be at the bottom of the trouble; third, depressing cardiac or nervous conditions should be inquired for; and, fourth, "rest must be sedulously avoided, it is simply fatal." Movements of the affected joints, while they cause pain, increase the appetite, improve circulation, and assist materially in blood-aëration. Drugs should be employed as the symptoms indicate.

The Prevention of Complications and Sequelæ in Scarlet Fever. —J. Lewis Smith, M.D., of New York (*Practitioner*, January, 1892, page 14), firmly believes that, while the type of scarlet fever varies greatly in different epidemics and in different years, the physician, by judicious treatment and a correct understanding of the indications, can prevent or at least render milder those complications or sequelæ which so commonly accompany this dangerous disease. Bacteriological investigations show that *microbes* occur abundantly upon the inflamed faucial, nasal, and post-nasal surfaces, especially where adenitis or cellulitis supervenes. The writer therefore employs for the nostrils a mild antiseptic wash, and for the pharynx a spray of:

R   Acidi borici, ʒii;  
      Sodii boratis, ʒii;  
      Sodii chloridi, ʒi;  
      Aquæ puræ, Oi.—M.

Sig.—One teaspoonful to be injected into each nostril hourly, the solution to be always warmed before using.

Cold applications to the neck are also useful. The early and frequent application of non-irritating germicides by means of the spray to the nasal, post-nasal, and faucial surfaces will prevent in a great measure the dis-



treising inflammations of these parts, such as cellulitis (sometimes resulting in gangrene), otitis media, cervical adenitis, etc.

Cold water to combat hyperpyrexia is recommended on theoretical and clinical grounds. Profound effects on the nervous system, such as eclampsia, are thus best guarded against and the patient is rendered as comfortable as possible. Cardiac tonics are important to prevent *ante-mortem* heart-clots. The patient should be kept in a warm room and all drafts avoided until two or three weeks after the rash has disappeared. By the adoption of such a treatment, and more especially by combating all microbic infection, the complications which have been mentioned already, together with scarlatinal rheumatism, pericarditis, endocarditis, and glomerulo-nephritis may be successfully prevented.

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## THERAPEUTICS.

IN CHARGE OF ALEXANDER D. BLACKADER, B.A., M.D.,  
Professor of Therapeutics, McGill University, Montreal, Canada.

**The Toxic Properties of Tobacco.**—Dr. W. Carroll Chapman (*Virginia Medical Monthly* for November, 1891) records a number of cases of children, from ten to twelve years old, who suffered from severe toxic symptoms while employed in carrying tobacco from the steaming reservoirs to manipulators who stemmed the leaves. The symptoms observed were: shallow, gasping respirations, severe abdominal or umbilical pain, and an irregular wiry pulse. Emaciation developed rapidly. One of the cases, a girl, died on the fifth day from asphyxia. The steaming process offered the most favorable conditions for the volatilization of the toxic principles in the tobacco. Whether *nicotine* was responsible for the effect produced on these cases or not it is impossible to say. Certain it is that familiarity with this drug should not permit practitioners to forget its active toxic properties. In addition to Dr. Chapman's reported cases, an instance of tobacco-poisoning occurred recently in Camden, New Jersey. "A child of two years sucked an old pipe belonging to its father and died in a few hours."

**Europhen.**—Nolda, in the *Therapeutische Monatshefte*, October, 1891, tells of some interesting therapeutic results with europhen. The majority of six cases of soft sores treated with this drug healed in from seven to ten days, while others took twelve and fourteen days respectively. The affected areas were irrigated with a solution of the perchloride of mercury (one to two thousand) and afterwards dusted with the pure powder. In one instance a large sore was selected, one-half of which was treated with europhen and the other half with iodoform, which resulted in the complete healing of the part treated with europhen two days earlier than that treated with iodoform. In suppurative otitis media, hard chancre, and leg ulcer europhen

gave excellent results. Siebel has found that this drug has a similar anti-tubercular action to iodoform, and hence is indicated when for any reason the better-known drug cannot be used. It is harmless even in large doses. Its odor is much less penetrating and offensive than that of iodoform.

**Camphor Hypodermically.**—Dr. Alexander, of Berlin (*Berliner klinische Wochenschrift*), has published recently some observations which show most excellent results where camphor is given subcutaneously (one part of camphor to nine parts of olive oil) to persons having pulmonary disease. In England and on the continent the hypodermic use of camphor in solution in oil, alcohol, or ether is more or less general, but not so much so as in Russia, where it is considered invaluable in the treatment of threatening collapse and other affections. Since the effects of camphor are distinctly cumulative, it was observed that four daily injections of fifteen minims were enough usually to produce considerable physiological effect, manifested in some by headache, in others by nervousness. After a week, the patient having been kept quiet, another injection caused no untoward symptoms. Phthisical cases it was observed were physiologically less affected than others, while those in the latter stages of pulmonary disease were particularly benefited.

Night-sweats seemed less severe than formerly, the irritative cough almost disappeared, expectoration was less than usual, and in every way the patient's condition improved. If these injections were used in bronchitis, they seemed at first to increase the expectoration, and later to cause it to disappear. They were clearly demonstrated to be useful in hæmoptysis, and after injections there were few recurrences and there was less fear of them on the part of the patient. The injections seemed useless in emphysema, but were especially valuable in pneumonias complicated by cardiac disease in the frail and weakly. They also aborted follicular tonsillitis and coryza, and seemed to take the place of digitalis when that drug had been exhibited up to the point of tolerance. Proportionately small doses should be given to children. These injections did not affect nursing infants whose mothers were being treated for catarrhal pneumonia.

**Peroxide of Hydrogen.**—Dr. S. S. Wallian (*Medical News*, January 30, 1892) records the result of several analyses of this drug. It is quite well known that the name given to this popular, though still unofficinal, preparation is a chemical misnomer, and that the compound itself is a very unstable one, undergoing decomposition rapidly if exposed to varied temperatures, or even precipitation when influenced by platinum, zinc, or similar metals. In the analysis of five specimens made by him he found the majority to be not only useless but decidedly injurious. This is chiefly due to hyperacidity and the formation of new products in the liquid. This compound to be useful should be a neutral one, and, as it is nothing more than water containing an excess of oxygen, it should rightly be called



hydrogen binoxide or dioxide. Various means are taken by the chemist in order to render the solution acid for the purpose of securing greater stability and clearness, and the introduction of harmful coloring substances to give the liquid a pleasing appearance is quite common. This defeats entirely the very object of its preparation and renders this powerful agent quite injurious. The stability of  $H_2O_2$  may be tested for in one of two ways: 1, if decomposition has begun, the cork when first removed will be thrown out with some violence; if this occurs the preparation is quite useless; 2, the solution must be neutral and somewhat metallic to the taste. A volumetric test with sulphuric acid and permanganate of potassium is given in detail, for which, however, the reader is referred to the original article. This study must revolutionize the production of this valuable antiseptic, and the unreliable preparations in the market will explain the many failures of this drug in the hands of some surgeons as compared to the good results that others have had with it.

**Nerium Oleander.**—Felix Baron von Ohfele, M.D. (*Merck's Bulletin*, January, 1892), reports seventy-four cases treated with this drug, altogether four hundred and twenty-seven days. It is highly improbable that any new remedy will ever replace digitalis, yet this remedy not seldom fails, is ill borne, or tolerance soon makes it useless. Then it is that a succedaneum is of the utmost consequence. Nerium oleander, it is claimed, fully completes the work begun by digitalis. The most noticeable feature of this report is the continued pulse-retardation brought about by its use. This lasted in some cases as long as two weeks after the discontinuance of the drug. It is also inferred that larger doses taken over a short period, and then omitted as long as pulse-retardation is continued, would prolong its action and lessen the likelihood of tolerance being reached. Tinctures of the strength of one to ten are best for use in twenty-drop doses three times a day or as the urgency of the case may admit.

R Tincture of oleander, two and one-half fluidrachms;  
Peppermint-water, fifteen drops.

Sig.—Twenty drops three times a day with a teaspoonful of sweetened water.

Schmiedeberg believes the active principle of nerium oleander and digitalis to be identical.

**Pental.**—The Berlin correspondent of the *Provincial Medical Journal*, December 1, 1892, calls attention to this new anæsthetic. A discussion of the drug will be of most interest in dental surgery. "Pental is an amylene represented by the formula  $(CH_3)_2C CH CH_3$ . It is a colorless liquid of low specific gravity, boiling at  $38^\circ C.$  ( $100.4^\circ F.$ ), very volatile and inflammable, burning with luminous flame, insoluble in water, miscible in all proportions with alcohol, chloroform, or ether." It will produce narcosis in one minute or in a minute and a half, which proceeds gradually without disagreeable

symptoms. Neither the mucous membrane nor the respiratory tracts are affected by it.

Sensation is completely paralyzed, but consciousness partly remains,—sufficiently for the patient to be aware of the movements of the operator although oblivious to pain. The heart's activity and the respiration remain unaffected. Consciousness is restored slowly. Even in large doses this drug has not produced any dangerous symptoms.

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## NEUROLOGY.

IN CHARGE OF B. SACHS, M.D.,

Professor of Mental and Nervous Diseases in the New York Polyclinic; Neurologist to the Montefiore Home for Chronic Invalids; Consulting Neurologist to the Italian Home of New York City.

Zur Kenntniss der primären acuten Polymyositis. (Contribution to the Study of Primary Acute Polymyositis.) By Prof. A. Strümpell. (*Zeitschrift für Nervenheilkunde*, vol. i. p. 479.)

Polymyositis is a rare disease that has attracted considerable attention during the past four years. Almost simultaneously E. Wagner, Hepp, and Unverricht published the first reports of a new disease characterized by an acute degenerative inflammation of nearly all the muscles of the body, which if it involved the muscles of respiration and deglutition was apt to lead to a fatal issue. In this country the only typical case thus far reported upon was published by G. W. Jacoby, in the *Journal of Nervous and Mental Diseases* for 1887. To this list of cases, which is not complete, Strümpell has added another, which was carefully studied, and in which the diagnosis was corroborated by the post-mortem examination.

Strümpell's patient was a man seventy years of age. Five weeks before admission to the hospital he was stricken down with nausea, vomiting, headaches, and general malaise; about eight days later, severe pains in arms and legs, with distinct swellings in various parts of the body. In consequence of a swelling in the face, an attending physician thought the case a typical erysipelas. Two weeks later severe pains while speaking, chewing, or swallowing, increased salivation, marked stomatitis, and constipation were added.

In the further course of the disease the following symptoms were noted: œdema of forearms, arms painful to touch and during active and passive movements, marked paresis of upper and lower extremities, patellar reflexes diminished, plantar reflex normal, cutaneous sensation normal, faradic and galvanic excitability of muscles very much diminished or lost. Shortly before death, ptosis of the right eye and impairment of ocular movements inward. Bronchitis, broncho-pneumonia, paralysis of respiration, death. The microscopical examination of a number of muscles revealed an increase of nuclei, an acute interstitial myositis, loss of striation, and slight vacuolization. No marked changes either in the ganglion-cells of the anterior horns or in the peripheral nerves.

Strümpell gives a very clear account of the chief features of this disease. It is apt to be confounded with trichinosis or multiple neuritis.



Hepp described a case as one of pseudo-trichinosis. Cases of trichinosis are attended by greater gastric and intestinal disturbances, but the resemblance between the two diseases is so great that the diagnosis of polymyositis will be warrantable only in case the possibility of an invasion of trichinæ can be excluded. Polymyositis can be distinguished from polyneuritis by the distribution of pain (whether or not along nerve-trunks), by distinct disturbances of sensation in cases of multiple neuritis, and by the electrical reactions, which are more apt to partake of the character of the reaction of degeneration in cases of neuritis. In cases of polymyositis the œdema and inflammatory swelling are apt to be more marked than in cases of multiple neuritis. Since Senator has published a case of multiple neuritis with interstitial myositis, it is evident that the difficulties of diagnosis may be very great. The author also calls attention to the fact that the disease in question is not to be confounded with cases of polymyositis after acute infectious diseases (puerperal fever, etc.), or with those that are the result of unusual muscular exertion.

**A Case of Anterior Poliomyelitis and Multiple Neuritis.** By W. R. Gowers, M.D., F.R.S. (Reprinted from vol. xxiv. of the Clinical Society's "Transactions," March 13, 1891.)

In this paper Dr. Gowers reports a very unusual combination of diseases. The history is about as follows :

A boy, aged seven, was attacked with acute atrophic paralysis in June, 1889; typical onset with symptoms pointing to involvement chiefly of the cervical cord; complete paralysis of left arm in all parts, and also of the right upper arm and shoulder; the right hand could be moved fairly well. Legs could be moved freely in all parts. Knee-jerks normal. . . . The ulnar and median nerves in the arms were especially sensitive, more so in the left arm than in the right. In the legs the tenderness was localized in the sciatic nerves, which were sensitive to pressure both in the popliteal space and at the back of the thigh and also to tension. The muscles presented rapid increase of atrophy, while the tenderness of the nerves gradually lessened,—proof of the spinal nature of the palsy. Moreover, a week after the onset the knee-jerks had become excessive and a well-marked foot-clonus had developed on each side, a combination of symptoms often following upon cervical poliomyelitis.

In Gowers's case the neuritis passed away, but the atrophic paralysis persisted. During the past summer the reviewer has seen more than thirty acute cases of poliomyelitis. In many of these pain was so persistent, particularly about the joints, as to form one of the chief symptoms of the initial stages of the disease; but in only one case, a child three years old, was he able to observe distinct sciatic pain, which lasted from the fourth to the eleventh day after the onset.

Incidentally Dr. Gowers, full of his subject as he is, throws out a number of valuable suggestions. He thinks that poliomyelitis is an infectious disease (in this he agrees with many other authors); that a chemical poison is more probable than an organized virus, and that, even when the

latter is the primary agent, it may act by producing a chemical poison to which the effects are immediately due. The forms of multiple neuritis Gowers would subdivide into the parenchymatous and the adventitial; the latter is represented by a severe sciatica, the former by the typical alcoholic neuritis. The parenchymatous form is not only multiple but symmetrical, a blood-state acting alike and equally upon similar structures.

The author goes into further speculations regarding the relation of toxic agents to the various forms of neuritis. Interesting as these views are, we cannot reproduce them here. We close with the following remark on syphilitic neuritis: "We may have, apparently, sometimes an isolated or irregular adventitial neuritis, such as the organisms themselves may produce, and also a later parenchymatous degenerative form as part of the lesion of tabes due to a product of the growth of the syphilitic organisms [very like Strümpell's theory.—REV.], and hence resisting, as it unquestionably does resist, the therapeutic agents that so quickly arrest the adventitial process."

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## PEDIATRICS.

IN CHARGE OF F. FORCHHEIMER, M.D.,

Professor of Physiology and Clinical Diseases of Children, Medical College of Ohio, etc.

**Sleep in Childhood.**—Dr. Adalbert Czerny, clinical assistant in Epstein's clinic at Prague, has made some very interesting observations on sleep in childhood in the physiological state (*Jahrbuch für Kinderheilkunde*, 1 and 2, xxxiii.). The investigations are preliminary to an extended series on the action of narcotics and hypnotics in children, and, therefore, of importance. So many things have been said concerning sleeping children that anything which has been worked out in a truly scientific manner and spirit must be looked upon as a valuable contribution. The author determines intensity of sleep by means of an electrical apparatus which, essentially, consists of ten Leclanché cells, connected with the child to be experimented upon by means of a Du Bois-Reymond induction-coil in whose circuit there are a rheostat, a galvanometer, and a key for completing or interrupting the current. The electrodes are zinc plates attached to the arms of the children before they are put to bed, and in such a way as neither to compress the arms nor to disturb the children in their natural movements. He has tested children awake, and finds that sensibility to induction-currents is least in the newly-born, and becomes greater as the first year of life is approached, increasing but little from that time.

In older children that were awake during the whole day two maxima of intensity of sleep were observed, the first during the first hour of sleep, the second during the morning hours. In the fifth and sixth hours the least intensity is found, and the second maximum is not as great as the first. In infants during the first weeks of life sleep usually lasts but three hours,



and the intensity presents but one maximum. In older infants there is found but one maximum, but the descent of the curve is slower, so that the duration of sleep becomes longer; when infants awaken and fall asleep again, the same curve is noticed as before, but not of the same intensity. In other words, the intensity of sleep is affected by previous naps.

The less the loss of heat from the skin the greater the intensity of sleep; the more water given off by the skin the greater the intensity. As a result of this, the author was induced to make thermometric investigations, and he finds the maxima of temperature are arrived at during the greatest intensity of sleep, and the minima during the least intensity. The skin gives off very much water during the greatest intensity, this being followed by reduction in temperature as well as in intensity of sleep, so that it would seem as if the skin acted as a regulator for intensity, which, when interfered with, would lead to narcosis.

Last, but not least, the author has made observations as to the pulse and respiration of children, which, as far as infants are concerned, are most important, and, as he publishes kymographic tracings, must be accepted as final. The notion of Cheyne-Stokes respiration as the normal type of infants' breathing must henceforth be discarded. The more intense the sleep the longer the pauses between successive respirations, the lower the co-ordinate but the longer the abscissa of the curve. In infants pauses of respiration occur that may last from five to ten seconds, and the succeeding respirations may not be affected by them; this would represent the apnoëic phase of Cheyne-Stokes breathing, but no dyspnœic phase follows. The author claims that this does not occur during greatest intensity of sleep, and can be prevented by carefully covering the children so as to prevent loss of heat by the skin. The pulse follows the respiratory curves, becoming slower during the pauses and more rapid with respiration. We shall look forward with great interest to the experiments that are to be made upon this scientific basis.

Note sur l'Infection secondaire microbienne à Staphylocoques dans la Chorée. (A Note on Secondary Microbic Infection by Staphylococcus in Chorea.) Par M. Triboulet, Interne à l'Hôpital des Enfants-Malades. (*Revue des Maladies de l'Enfance*, December, 1891.)

This article must be looked upon as an extension of the one published by Leredde in the May number of the same journal. Leredde comes to the conclusion that there is a choreic endocarditis which, possibly, may be classed among those inflammations of the endocardium produced by lower forms of life, and, therefore, would make all forms of endocarditis non-rheumatic. Triboulet relates the case of a boy nine years of age, coming from a rheumatic family, having had three attacks of articular rheumatism, each one followed by an attack of chorea and the second one by a pericarditis. The last attack was followed by fatal pericarditis, and in this condition he found the staphylococcus albus by culture. The autopsy of another case is reported, in which the staphylococcus albus and the staphylococcus aureus

were found both in the spleen and the liver. Leredde, in his case, found the staphylococcus albus and aureus in blood taken from the finger, and the conclusion arrived at is that possibly the whole clinical picture may be due to the presence within the blood of these lower forms of life; in other words, that we are dealing with a general infection, microbic in its nature. It would be too early to pass any definite opinion upon these interesting observations, but the fact must not be lost sight of that staphylococcus albus is present, under normal conditions, in the skin, and its presence in a culture from blood taken from the finger of a hospital patient might or might not mean much. Its presence in the liver and spleen would naturally arouse great suspicion; but it would take more than these observations to complete the logical chain,—staphylococcus albus from the finger and in the spleen, therefore the two occurrences are connected.

## SURGERY.

IN CHARGE OF B. FARQUHAR CURTIS, M.D.,  
Surgeon to St. Luke's Hospital and to the New York Cancer Hospital.

**Poisoning by Cocaine.**—Berger (*Gaz. des Hôpitaux*, 1891, p. 1367) reported a case of poisoning by cocaine at a recent meeting of the French Society of Surgery. The patient was a healthy young man, with a hydrocele the size of a turkey's egg, very tense, which was tapped and evacuated, and a spoonful of a two-per-cent. solution of cocaine (estimated to contain forty centigrammes—about seven grains—of the alkaloid) injected and at once allowed to run out, apparently the whole quantity being recovered. An injection of tincture of iodine was then made into the sac, and the patient walked out, but soon returned complaining of feeling ill, and falling into collapse, in spite of vigorous treatment, he shortly died in coma preceded by convulsions. The autopsy revealed no other cause of death, and nothing to account for the patient's idiosyncrasy. The hydrocele-sac did not communicate with the peritoneal cavity.

In the discussion which followed, two other cases of accidents after such injections for hydrocele were reported, but they were not fatal. Reclus claimed that accidents would not happen if not more than ten centigrammes (about one and one-half grains) of cocaine were employed, and he had himself operated over sixteen hundred times without any accidents. Pozzi had seen an alarming condition follow an injection of two and one-half centigrammes (less than half a grain) into the gum to open an alveolar abscess. The reviewer feels compelled to add that with such large doses as were employed in the fatal case, and other cases mentioned in the discussion, the alarming symptoms are not surprising.

**Decalcified Bone-Grafts.**—Le Dentu (*Gaz. des Hôpitaux*, December, 1891, p. 1292) reports a successful case of bone-implantation in a boy six-



teen years of age, from whom he had removed seven centimetres of the lower ends of the tibia and fibula subperiosteally, with the upper surface of the astragalus, which was fused to them, filling the gap with a single large piece of decalcified bone. Not only did the graft heal in completely, but the motion at the ankle-joint was good. The original disease was a tuberculous osteitis. Nine other cases from his clinic are briefly related by Buscarlet (*ibid.* p. 1361), five being bone-cavities in the os calcis, tibia, and femur. One child, after évidement of the lower end of the femur, and implantation of decalcified bone, walked upon the limb in three weeks. In a young woman twenty-one years of age, in very poor health, with tarsal disease of three years' standing, the os calcis, astragalus, and scaphoid were removed, and their places supplied later with large pieces of decalcified bone, a useful although short foot being obtained in spite of the girl's poor condition. In no case was there any accident, nor did it become necessary to remove the bone.

Buscarlet examined the bone after similar operations performed on animals, and found that the graft heals in by fibrous tissue, and that the embryonal cells penetrate the decalcified bone, infiltrating it and absorbing it. The giant cells of the medullary tissue act as osteoblasts, new bone is formed around the inserted pieces, and projections of new bone penetrate it in all directions. The decalcified bone therefore acts as a temporary support, and in the course of several months it is replaced. Le Dentu prefers large pieces, because the support given is greater and the application is easier.

**Resection of the Acetabulum.**—H. Schmid (*Archiv f. klin. Chirurgie*, xlii. 842) describes a method for removal of the acetabulum. He states that even in early resection of the hip for tuberculous disease the acetabulum is generally found to be implicated, and it is desirable to remove it. He makes Langenbeck's incision for resection of the hip, dislocates the head of the femur by rotating the bone strongly outward and adducting it, then makes another incision from the middle of the first directly forward to the anterior superior spine of the ilium, through both skin and muscle. The periosteum and muscular attachments are then stripped from the pelvis in all directions, and also over the edge, so that the pelvic fascia can be detached within as far as the sciatic notch. A keyhole-saw or the chisel then divides the bone from the anterior border, between the superior and inferior spines, to the sciatic notch, and this is the most difficult part of the operation. The horizontal ramus of the pelvic bone is divided just in front of the acetabulum by means of a chain-saw passed through the obturator foramen, and the remaining bony connections are severed in the same way. The only muscles divided are the rectus femoris, the tensor vaginæ, one head of the biceps, and the sartorius. Schmid himself acknowledges that the operation is difficult and severe. He has performed it four times,—all in children,—twice where disarticulation of the limb had been done pre-

viously. Both of the latter cases recovered. In another case resection had been performed in the usual way with a bad result, and the acetabulum was removed. The end of the shaft of the femur rested against the pelvic fascia after this operation,—the trochanter minor obtaining some bony support from the ascending ramus of the ischium. The boy was allowed to sit up one week after the operation (as is Schmid's custom after resection of the hip), and to stand two weeks later. Six months afterwards he could sit down well, put his weight almost as well on the resected limb as on the sound one, and go up and down stairs, using both legs alternately. A small sinus still persisted. There was only three centimetres shortening and but trifling deformity of the pelvis. In the fourth case the hemorrhage was very sharp, and the patient died of shock twenty-four hours afterwards.

**Operations upon the Common Bile-Duct.**—Frank (*Wiener klin. Wochenschrift*, 1891, No. 51, 960) describes two cases of operation upon the common bile-duct, making ten published to his knowledge (Kümmell 1, Heusner 1, Courvoisier 3, Küster 1, Rehn 1, Braun 1), with only one death. Both cases occurred in Albert's clinic,—Frank operating upon one, and Hochenegg upon the other.

**CASE I.**—Woman, forty-two years of age, attacks of gall-stone colic for three months. Incision six inches long, parallel to free border of ribs, joined by another three inches long from the middle of the first to the navel. Gall-bladder atrophied; strong adhesions. The common duct was found dilated, containing at its outlet a large stone which could not be broken. The duct was incised, the stone removed, and the wound united by sutures passing through the entire thickness of the wall, covered in by a second row like Lembert sutures. The suturing was difficult. Iodoform-gauze drain; good recovery.

**CASE II.**—Woman, forty-six years of age, attacks of colic for over three years. Similar incision, but larger. Gall-bladder shrunken and empty; stones in common and cystic ducts so hard that they could not be broken. The ducts were lifted up by a finger passed through the foramen of Winslow, and the stones removed by three incisions; but it was found impossible to suture the wounds, and an iodoform-gauze tampon was introduced. Bile was discharged for six weeks, and two weeks later the fistula closed. One year later the patient was well, but had a hernia in the middle of the scar.

**Brain-Softening after Ligature of the Common Carotid.**—Zimmermann (*Beiträge z. klin. Chirurgie*, viii. 364) has made a study of the frequency of the occurrence of damage to the brain after ligature of the common carotid, publishing five new cases of Czerny's. Of seventy cases which he collected, sixty-eight per cent. recovered. There were symptoms of brain-trouble in twenty-six per cent., and in eleven and six-tenths per cent. actual softening took place, a percentage like that found by Reis, but much less than those of Pilz and Le Fort. Most of the recoveries were in persons under thirty years of age, and this at once gives the clue to the most common cause of brain-lesions,—atheroma of the arteries, which pre-



vents the dilatation of the vessels and the development of the collateral circulation, and results in venous hyperæmia, œdema, and finally anæmia, with the formation of a red infarction. A true white infarction has been observed in experiments on animals, but not as yet in man, caused by a proliferation of the endothelium at the point of ligature, provoked by injury to the internal arterial coat from tying the ligature too tightly, and the extension of a white clot towards the brain until the collaterals are shut off. Or a portion of this clot may break off when its apex reaches the point of entrance of the collateral circulation, forming an embolus, and being carried by the blood-current into the cerebral arteries. These possibilities emphasize the modern teaching not to draw the ligature so tight as to divide the intima. Other causes, such as injury to the sympathetic nerve in the neck during the operation, may also affect the circulation of the brain.

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## GENITO-URINARY SURGERY.

IN CHARGE OF WILLIAM K. OTIS, M.D.,  
New York.

On Reflex Irritations and Neuroses caused by Stricture of the Urethra in the Female. By Fessenden N. Otis, M.D. (*Medical Record*, New York, 1892, xli., No. 2.)

In this article the author advances the fact that stricture of the urethra in the female has been but little considered either in works on special diseases of the female genito-urinary organs, or in those solely devoted to the subject of urethral stricture, and hence it might be inferred to be a rare and unimportant difficulty. At the same time symptoms occurring in the female which in the male would at once suggest the probable presence of urethral stricture are referred to as "irritable bladder," and are attributed to causes quite independent of their possible relations to the urethra. Although over-distention in such cases is one of the most efficacious means of treatment, "examination of the urethral canal for conditions which would justify such procedure seems to have been completely lost sight of."

Organic urethral stricture in either the male or the female, in the opinion of the author, is *inevitably* due to the exudation and organization of plastic lymph in the subepithelial urethral tissues, any irritation sufficient to cause this producing stricture, though the inflammatory process may be of so low a grade as to escape the cognizance of the subject of it. Strictures are formed in this way, from the irritation of the urine, in subjects of gouty or rheumatic diatheses, practically identical with those resulting from gonorrhœa, and the foundations, at least, of the largest proportion of urethral strictures in the male are due to plastic deposits from attacks of lithiasis "often long antecedent to the gonorrhœas to which they are attributed."

After a brief reference to frequent and severe reflexes occurring in the male caused by strictures of even large calibre (brought prominently before the profession in 1874), Prof. Otis presents a series of cases to demonstrate that stricture of the urethra may occur in the female sufficient to cause reflex symptoms equally severe, and also that in cases where relief is not obtained from ordinary measures the urethra should be explored by means of the urethrometer or bulbous sound, if only to eliminate an important element in the diagnosis and treatment of these cases.

In the treatment of these cases of stricture of the urethra in the female, divulsion is probably a much less serious operation than in the male, and, when carried to an extreme degree, rarely results in a permanent loss of control of the sphincter. The tendency to recontraction is marked, however, and in most instances the contractions will yield to gradual dilatation. The symptoms having once been relieved, the calibre of the canal may be maintained by the patient herself introducing the closed urethrometer into the bladder, expanding it to the degree required, and then gently withdrawing it.

**The Enlarged Prostate and its Operative Relief.** By E. L. Keyes, M.D. (*New York Medical Record*, 1891, xl., No. 18.)

After a careful résumé of the work of other surgeons in this field and a report of eight cases of his own, Prof. Keyes arrives at the following conclusions :

1. Prostatectomy is justifiable, and does what nothing else can.
2. The perineal operation is moderately less severe, but decidedly less reliable, than the supra-pubic ; it should rarely be preferred unless there be urethral complications. In very feeble men it may still be elected.
3. The operation is not justifiable with present statistics if the patient can be comfortable in catheter life.
4. No physical condition of the parts or of the patient, short of a practical moribund state, contraindicates operation. By it in desperate cases life is often actually saved, although the operation is a grave one and its mortality high.
5. With the rongeur—better than any instrument—the bladder outlet can be lowered, and polypoid or interstitial growths jutting into the prostatic sinus can be removed, and these points are more essential to a successful operation than is the taking away of a large portion of the prostatic bulk. The instrument next in value is the curved scissors, but the skilled finger is most important of all. Most of the work has to be done by the aid of touch, as the bleeding soon becomes free and renders visual inspection impossible.
6. Diuretin, perhaps, is of value when the kidneys are damaged. It certainly does no harm.
7. Chloroform alone, in my opinion, should be used as an anæsthetic, for the kidney's sake."



**Intra-Vesical Surgery.** (*Centralb. f. Chir.*, 1891, No. 51; also *Ann. d. Mal. d. Org. Génito-Urin.*, 1891, ix., No. 12.)

Dr. Max Nitze, the inventor of the cystoscope, having succeeded in producing an instrument by means of which a practically perfect visual inspection of the vesical interior can be accomplished, has endeavored to extend the scope of the instrument so that various operations—as the removal of small tumors, the cauterization of ulcers, the extraction of foreign bodies, etc.—may be accomplished under the direct guidance of the eye of the operator, without the dangers and discomfort attendant upon a cutting operation.

For this purpose Dr. Nitze has designed a series of somewhat complicated forceps, which fit over the shaft of the cystoscope in such a manner that the calibre of that instrument is but slightly increased, and it can be introduced as easily as the ordinary lithotrite. These forceps are manipulated by a lever at the proximal end, while, the distal end being directly in the line of vision, it is comparatively easy to see exactly what is being grasped by them. Various forms of electric cautery and *écraseurs* may be introduced in the same manner, and it is expected that the instrument will be particularly serviceable in cases of commencing recurrence of tumors after cystotomy. The site of operation may thus be examined every three or six months, and any new growth removed and its base thoroughly cauterized before it has reached more than an appreciable size.

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## ORTHOPÆDICS.

IN CHARGE OF REGINALD H. SAYRE, M.D.,

Assistant Physician to the Chair of Orthopædic Surgery, Bellevue Hospital Medical College,  
New York.

**Zur Therapie des Hohlfusses.** (The Treatment of Pes Cavus.) By Dr. E. Kirchoff. (*Zeitschrift für Orthopädische Chirurgie*, 1 Band, 2 and 3 Heft.)

The author gives a *résumé* of the treatment employed by Bely, of Berlin, for the cure of pes cavus or arcuatus, which is based on the principle of intermittent traction applied at intervals up to the point of the patient's tolerance. The apparatus consists of a metal sole-plate with a side-bar to prevent adduction of the foot. Both of these are well padded. Under the sole runs a bar, which can be drawn away from the latter by means of three screws. The foot is securely bound to the plate by a Martin's rubber bandage passing around the ankle, over the dorsum of the foot, and under the metal plate outside of the adjustable bar. A webbing belt is then placed outside the elastic bandage in the same manner. By turning the screws the bar under the sole-plate is drawn away and the dorsum of the foot thus pulled down by the traction of the rubber and

webbing bandages. Later on in the treatment, when the deformity has been overcome, but requires a certain amount of attention to keep it from recurring, the patient has a somewhat less complex affair to apply to his foot at home, in which he binds the foot firmly to a sole-plate by rubber bandages passing around the ankle, over the instep, and under the sole-plate, which has projecting from it a large metal shoulder. The apparatus first mentioned is also supplied with T-shaped handles at both ends, with which a varus or valgus foot may be twisted while the patient is anæsthetized. From the form of the apparatus the patient would be compelled to use crutches while wearing it.

De la Mobilisation de quelques Tendons par Déplacement des Saillies osseuses sur lesquelles ils s'insèrent. (The Reunion of Certain Tendons by the Removal of the Bony Prominences to which they are inserted and Tendinous Autoplasty.) By A. Poncet. (*Revue d'Orthopédie*, vol. ii., No. 4.)

The idea of Poncet does not seem to have received in this country the recognition which it deserves, as it offers a means for uniting severed tendons under certain circumstances where they could not otherwise be joined without impairing the function of the joint which they control. In rupture of the tendo Achillis, where the severed ends cannot be joined without the production of equinus, Poncet saws off the posterior part of the os calcis by a vertical cut at right angles to the long axis of the foot. This allows the lower portion of the tendo Achillis to be slid up and joined to the proximal part. The severed bit of os calcis is then nailed fast to the anterior portion, but on a higher level than it originally occupied. In certain cases additional length is given to the tendo Achillis by cutting its edges in a zigzag, which allows it to stretch.

In fracture of the patella where approximation of the fragments cannot be made, the tubercle of the tibia is chiselled off with its ligamentous attachment. The fragments of the patella are then joined and the tubercle is nailed to the tibia just below the junction of the bone and semilunar cartilages. The same principle has been employed in rupture of the triceps.

Opération de la Syndactylie congénitale. (Operation for Congenital Web-Fingers.) Par le Dr. G. Féliget. (*Revue d'Orthopédie*, January, 1892.)

The author reviews the various operations that have been proposed for the relief of this deformity and then gives a new proceeding of his own. He has operated in five cases, twice before the second month, twice before the eighth month, and once in the course of the second year. In these cases the proximal phalanges were fused together. The operation is divided into two steps,—first, the establishment of an opening at the root of the fingers; second, the separation of the fingers. A flap is dissected up from the palmar surface at the base of the united fingers, occupying about the middle



third of the webbed fingers and extending from the junction of the palm with the fingers nearly to the joint between the first and second phalanges. The base of this flap is in the palm. On the dorsal surface a flap of equal size is dissected up, the base of this flap being towards the nails. Both flaps are cut thick. Through the raw space thus exposed between the fingers a hole is now made by a canula, and the flaps are drawn through this in opposite directions and stitched with a couple of stitches, thus forming a hole between the fingers at their base, which is covered with skin towards the hand and towards the nails but leaving a small raw surface on the sides of the fingers. A bit of iodoform gauze is drawn through the hole. In about a week the flaps have united and the second step is begun. A needle with silk thread is passed between the fingers a little beyond the new-formed hole and thrust back again just below the junction of the phalanges. This thread is tied tight, and every second day is tied still tighter, to cut its way through the skin, bits of iodoform gauze being inserted in the holes as it cuts its way. The end phalanges are then cut apart, and later on the bond of union formed on the distal side of the hole at the base of the fingers is divided. The operation occupies in all about five weeks, but Dr. Féliget thinks it is more rapid in the end than other operations, as it has not been followed by relapses, in his experience, and he thinks it offers a surer mode of cure than any method yet proposed.

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## OBSTETRICS AND GYNÆCOLOGY.

IN CHARGE OF J. M. KEATING, M.D.,

Colorado Springs, Colorado; Fellow of College of Physicians of Philadelphia; Formerly Consulting Physician for the Diseases of Women, St. Agnes's Hospital, Philadelphia; Consulting Surgeon to the Maternity Hospital; Gynæcologist to St. Joseph's Hospital; Visiting Obstetrician to the Philadelphia Hospital (Blockley), and Lecturer on the Diseases of Women and Children; Editor "Cyclopædia of the Diseases of Children," etc.

**The Radical Treatment of Uterine Cancer.** By William Goodell, M.D. (*Medical News*, December 5, 1891.)

The author writes of the satisfactory results from vaginal hysterectomy in cases of uterine cancer where the vagina is not complicated, and the disease has not travelled along into the broad ligament, and where the womb is not fixed by adhesions.

He quotes the following interesting statistics: Martin collected up to 1886 three hundred and eleven cases, of which forty-seven died (15.1 per cent.); Leopold had eighty cases, with four deaths; Staude had twenty-two cases, with one death. The Dresden Klinik had the following statistics brought up to date (and appearing originally in the *Archiv für Gynäkologie*, Band xl., Heft 2):

In eighty cases examined two years after operation, forty-five were free from recurrence; 58.6 per cent. of fifty-eight cases were well after three

years; 59.5 per cent. of forty-two cases were well after four years; 60 per cent. of thirty cases were well after five years; 66 per cent. of nine cases were well after six years, and two patients were well after seven years. Leopold states that of seventy-six cases remaining under observation after recovery, seventy-two were still well, without recurrence, from one year to five and a half years after operation.

Goodell believes that catgut ligatures fresh from alcoholic solution and unmoistened by water are less objectionable for securing the broad ligament than any of the many forceps invented or silk ligatures. The technique employed by him is a blending of the best points of Martin's and Olshausen's operations.

The uterus is thoroughly curetted and then charred by Paquelin's thermo-cautery. The funnel-shaped excavation is next stuffed with iodoform gauze, and its lips are sewed together with a continuous suture.

Cleanse the vagina now with soap-and-water and swab out with a one to one-thousand mercuric-chloride solution. Lithotomy position; vagina opened by duck-bill speculum and two retractors; cervix seized with double tenaculum forceps, dragged downward and forward, and Douglas's pouch opened; and with a finger of the left hand in the openings, quilted sutures of *catgut* unite peritoneum to posterior vaginal wall. Add additional sutures as incision is prolonged up to insertion of broad ligaments. Push a sponge or roll of iodoform gauze with a string attached into pelvic opening to keep intestines up, and *mark this thread*. Drag cervix backward and downward, make a transverse incision across its anterior surface above the os, and strip off the bladder with the finger, and once more employ quilted catgut sutures to unite peritoneum with anterior vaginal wall. Two aneurism-needles curved to right and left are used to ligate successive portions of the broad ligament and thus free the uterus. The free extremities of the ligature are for the time being left uncut.

The womb descends lower and lower and finally is extirpated as its attachments are severed. It may be necessary, or helpful at least, to retrovert or antevert it when possible, and the ovaries and tubes should be ligated and removed.

When the womb is extirpated and the sponge or tampon removed, the free extremities of all the ligatures on the left broad ligament are seized in the left hand, and the stump on that side is drawn down below the level of the opening in the vaginal roof. It is sewed by one or two through gut sutures to the corresponding extremity of the incision. The same is done to the right stump, and the ligatures are cut off close to their knots; the ligatures of the tube and ovary that are too high to be made extraperitoneal are first cut off close to their knots.

A strip of iodoform gauze for drainage is now pushed up into the pelvic cavity through a small opening left in the vaginal roof, and the vagina is loosely packed with iodoform gauze. Bowels to be moved on third or fourth day, and after that the drainage iodoform gauze and vaginal tampon



are removed. No vaginal douche for at least a week, and to be employed then with the greatest care.

The Diagnosis of Early Extra-Uterine Gestation, etc. By Dr. J. Halliday Croom. (*Edinburgh Medical Journal*, October, 1891.)

The author classifies the principal signs and symptoms as follows:

- a. The general and reflex symptoms of pregnancy, especially if the pregnancy has occurred after a considerable period of sterility.
- b. Disordered menstruation, especially metrorrhagia, coincident with the symptoms of pregnancy, and gushes of blood accompanied by severe pelvic pains.
- c. Severe pains in the pelvis; attacks of pelvic pain, followed by tenderness in either iliac region, and other symptoms of pelvic inflammation.
- d. The existence of a tumor, presenting the characteristics of a tense cyst, sensitive to touch, actively pulsating, and of steady and progressive growth.
- e. The os uteri patulous, but the uterus displaced and empty.
- f. Paroxysms of severe and spasmodic pain in the pelvis, with general symptoms of collapse.
- g. Expulsion of the decidua in whole or in part.

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## OPHTHALMOLOGY AND OTOTOLOGY.

IN CHARGE OF J. E. HARPER, A.M., M.D.,  
Chicago, Illinois.

**Galvanism in the Treatment of Corneal Opacities.**—Dr. L. A. W. Alleman (*Times and Register*, November 21, 1891) reports his method of treating old corneal opacities by galvanism. He believes the reason such poor success has attended this treatment is that the current applied to the closed lids reached the opacity too feebly to affect nutrition. To overcome this difficulty he has constructed an electrode to be applied directly to the surface of the cornea. The cathode is applied to the cornea to produce disintegration of the scar-tissue, but in practice little difference is observed between the action of the two poles.

Before placing the electrode upon the eye it is applied to the tip of the tongue, and the rheostat is adjusted until the desired current is obtained. The eye being previously well cocainized, the patient's head is thrown back, the lids held well apart, and the electrode brought gently in contact with the cornea. As a rule, the applications are of three minutes' duration. The beginning current is one-half milliampère from one to two minutes. This is gradually increased to one and one-half milliampères and the sitting extended to two minutes.

**Compressed Disks in Ophthalmic Practice.**—Dr. Casey A. Wood (*Medical Standard*, October, 1891), writing on “Compressed and other Disks in Ophthalmic Practice,” claims for this form of medication the following advantages: First, slow, regular, and complete solution in the conjunctival sac. Second, the exhibition of a definite dose, the full effect of which may be looked for. Third, they do not lose their strength or decompose in a few days or weeks. Fourth, the cost of the gelatinous form is less than the imported French and English makes, and they are in many respects superior to the latter. Fifth, they are non-irritant and readily soluble. Sixth, the effects of both forms will be found to be many times greater than of the corresponding solutions. A disk containing one-thousandth of a grain of atropine is equal to one drop of a one-per-cent. aqueous solution of that drug, although nominally the latter is ten times as strong. Seventh, the portability of these disks has something to recommend them, as, like the armament of hypodermic tablets with which all of us are nowadays equipped, the surgeon may, if need be, carry about an assortment of these disks for the treatment of ocular affections. Eighth and finally, their application is simple. Having dampened a small camel’s-hair brush, touch it with a disk previously placed on a piece of clean, dry paper, when the disk will readily stick to the brush. The patient is now told to look up, the lower lid is drawn down, and the disk is placed against the scleral conjunctiva towards the outer canthus. The eye is now closed until the disk becomes softened and partially absorbed.

**Examination of the Eyes of School-Children.**—Dr. George Ferdinands (*British Medical Journal*, September 12, 1891) has investigated the condition of vision among three thousand and two school-children in Aberdeenshire. He adopted the following method of examination: “(1) vision for distant type; (2) examination by focal illumination; (3) ophthalmoscopic examination by the direct method. The age and sex of each child were tabled. Where any refractive error existed it was estimated by the direct method, and the degree of error carefully noted. In like manner other affections of the eye were also carefully recorded.”

Hypermetropia and malignant myopia were most prevalent in the school attended by the children of the humblest classes. The total percentage of myopes was 13.4; of hypermetropes, 16.5.

The conclusions drawn from the statistics on myopia are: 1. That among the school-children examined a large percentage (13.4) of myopia was discovered, especially in the schools where education is pushed, while in the country schools the percentage of myopia was small, never rising above ten per cent. 2. That both the percentage and degree of myopia increased with the ages of the children.

The conclusions with regard to hypermetropia are: 1. That among the school-children examined a large percentage (16.5) of hypermetropia was discovered, especially among children below twelve years of age. 2. That hypermetropia was most prevalent among the children of the poorer classes. 3. That the degree of hypermetropia decreases with the age. (Cohn denies this.) 4. That hypermetropia is apparently on the increase.



The other affections found among the school-children were:

1. *Disease of Eyelids*.—Under this heading there were one hundred and seventeen cases of blepharitis, and, although a few were associated with hypermetropia, yet the greater number were evidently the result of infection, for I frequently found a large number in the same class, while other classes remained free from the disease.

2. *Disease of Cornea*.—Twenty-nine cases, chiefly nebulae and leucomata.

3. *Disease of Iris*.—Five cases, not of any interest.

4. *Disease of Lens*.—Two cases of zonular cataract.

5. *Disease of Fundus*.—Three cases in which the choroid was affected, and one detachment of the retina.

6. *Strabismus*.—Forty-nine cases: of these forty-four were convergent, forty hypermetropic, and four myopic, while the remaining five were divergent,—all myopic.

7. Among the remaining affections found there were three cases in which the eye was shrunken (ophthalmia neonatorum), two albinos, and one with a large abscess of the lid.

To sum up, these investigations revealed:

1. A large percentage of myopia among the children examined.
2. A large proportion of hypermetropia.
3. Other diseases in varying proportion.
4. That the prophylactic measures adopted in the schools are inadequate.

## DISEASES OF THE LARYNX, NOSE, AND SURROUNDING STRUCTURES.

IN CHARGE OF J. PAYSON CLARK, M.D.,

Physician to the Throat Department of the Boston Dispensary; Assistant Physician for Diseases of the Throat, Massachusetts General Hospital.

**Etiology of Fibrinous Rhinitis.**—Dr. Lieven describes (*Münchener Medicinische Wochenschr.*, December 1 and 8, 1891) the symptoms and course of the two forms of this disease, the primary and the secondary, or artificial, following operations on the nose. In order to determine, if possible, the etiology, the author made cultures from a fibrinous exudation of secondary origin. Injections of these cultures into animals caused very little disturbance. Applications from the cultures on tampons were then made in the human nose, without result either in the normal nose or after the internal administration of iodide of potassium (to cause artificial coryza). But after cauterization of a turbinated body with trichloroacetic acid and the separation of the eschar, an application of some of the culture caused a fibrinous exudation in two cases. In later experiments the exudation occurred after the cauterization without the artificial introduction of the culture. This result the author explains by concluding that the room in which the experiments were done had become infected. The coccus from these cultures, although resembling the staphylococcus pyogenes aureus in appearance, differs from it in its manner of growth in cultures and in its effects on the living organism. The reasons given for not making these experiments on animals

are, that in small animals the nostrils are too small to be suitable and the number of larger animals available are insufficient.

**Rhinolith.**—Dr. Richard Wagner reports (*Münchener Medicin. Wochenschr.*, December 1, 1891) a case of rhinolith, showing its first symptoms in the second year of life and not removed until twelve years later. Its situation was not a common one, the stone being completely wedged in the back part of the right upper jaw, without blocking up the nostril. On removal through the posterior nares, a cubical cavity was left in the jaw.

**Diseases of the Brain after Simple Nose-Operations.**—Dr. Wagner (*Münchener Medicin. Wochenschr.*, December 22, 1891) finds only three such cases in literature, in all of which the middle turbinated body was the part operated on. In the author's case the lower and middle turbinated bodies were cauterized with the galvano-cautery (the middle one on its lower border). On the third day there were two violent hemorrhages, for the second of which the nose was tamponed. On the next day the temperature rose. The tampons were removed without effect on the temperature. Later, symptoms of meningitis appeared, and death soon followed. The blood in the hemorrhages came not from the cautery wound, but from the upper and back part of the nose. It was venous in character. Thrombosis had probably taken place in the longitudinal sinus, causing stasis and venous bleeding from the nose. There was no autopsy.

The middle turbinated body is the dangerous field. We cannot perfectly disinfect the nose, and it is not in our power, by any precautionary measures, to prevent such a catastrophe as this.

**Nasal Papillomata.**—Dr. Jonathan Wright (*New York Medical Journal*, December 26, 1891) considers, with most observers, that true papillomata are rare in the nose. The diagnosis from gross appearances is little better than conjecture. Many nasal tumors have the gross appearance of papillomata, but on microscopic examination are discovered not to be such. There have been great confusion and looseness in the use of this term, and as a generic one it should be abolished, or at least confined to growths having the microscopic characteristics of papillary fibroma. With this significance of the term, it is impossible to say how many cases of true papilloma have been observed, as only those which have been examined microscopically can be accurately classified.

**A New Method for treating Hypertrophied Turbinated Bodies.**—In cases of simple hypertrophy without obstruction where the galvano-cautery or other scar-producing agencies have been used, the resulting cicatricial contraction has often been more irritating than the original hypertrophy. Dr. Fred Whiting describes (*New York Medical Journal*, December 12, 1891) the following operation on the hypertrophied middle turbinated body with an electric trephine. After anæsthetizing the mucous



membrane with cocaine the trephine is applied to the portion of bone most prominent anteriorly. The trephine is carried backward and downward, removing the dependent portion of mucous membrane and a thin shell of bone. Care being taken to leave the membrane on the inner aspect of the bone and in contact with the septum intact, this manoeuvre is repeated until the bone is cut away to a point above its broadest portion. The flap of mucous membrane which has been preserved can be folded over the cut surface of bone and held in place by a small plug of cotton smeared in vaseline. Several possible complications are mentioned which are insignificant. As there is complete preservation of the mucous membrane, the formation of a large surface of scar-tissue is avoided.

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## DERMATOLOGY.

IN CHARGE OF WILLIAM A. HARDAWAY, A.M., M.D.,

Professor of Diseases of the Skin in the Missouri Medical College, St. Louis; Member of the American Dermatological Association.

**Erythema Keratodes of the Palms and Soles.**—Under this title Brooke (*British Journal of Dermatology*, November, 1891) gives an account of a horny affection of the palms and soles which he believes to differ from similar disorders already described. Of the disease under consideration he has observed two examples. The first patient was a single woman forty-seven years of age. The fingers and the palms, along their outer edges, were swollen, of a deep dusky-red color, hot and tense to the touch. Upon the dorsal surface this inflammatory condition extended only to the bases of the digits. The epithelium covering the palm, with the exception of an edge a quarter of an inch in breadth running around the edge of the hand, was hard and dry, and so much thickened that it masked the underlying red color, giving to this portion of the hand a dirty orange-gray hue. The affected epidermis was free from cracks and retained its normal markings. There was pain of a dull character and marked interference with motion from stiffening. The nails were streaked and slightly pitted. A similar condition to that found on the hands existed on the heels, the balls of the feet, and the under surfaces of the toes. The toe-nails presented well-marked hyperkeratosis subungualis. Upon the dorsal surfaces of the fingers and thumbs were erythematous papules, some of which were horny, but others like simple reddened prominences of ordinary skin. These papules occurred on some joints in pairs, while on others this feature was not marked. The second case was very like the first, but the area of redness did not extend beyond the palm onto the dorsum of the hands. This case also presented the papules on the backs of the joints. Under treatment, consisting of three minims of ichthyol three times a day, with the constant application of an ointment containing ichthyol and salicylic acid, the first case improved, but afterwards suffered a relapse, while the

second case recovered. The author states that the disease must be differentiated from eczema, psoriasis, syphilis, lichen planus, pityriasis rubra pilaris, ichthyosis, and chronic arsenical poisoning. The affection most resembling this is the keratoderma erythematosa symmetrica of Besnier.

**A Case of Keratosis of the Palms and Soles, probably of Arsenical Origin.**—Pringle (*British Journal of Dermatology*, December, 1891) reports a peculiar condition of the palms and soles which occurred in a young woman who was taking Fowler's solution in large doses (twelve drops three times a day), this being part of the treatment for psoriasis, from which she was suffering. Eleven months after the beginning of the administration of the drug the following condition of the palms and soles was noted. Solid, brownish-yellow, wart-like elevations of the epidermis were thickly studded over the palmar and plantar surfaces, as far as the middle of the distal phalanges of the fingers and the bases of the distal phalanges of the toes, giving to the skin a rough shagreen-like appearance. The size of the elevations varied from a pin's point to a split pea, and they were of various shapes, some being acuminate, others obtuse or flat-topped. In addition to these isolated prominences there was a universal thickening of the epidermis, limited to the regions where it is normally thick, and not extending onto the wrists or dorsal surfaces. There was well-marked hyperhidrosis of the affected parts. There was no surrounding erythema or other evidence of inflammation. As it was thought that the disease might be due to arsenic, no change was made in the treatment for some time, while the progress of the case was closely watched. The lesions increased in number and size. The arsenic was discontinued, but after a month, no improvement having been noted, applications of resorcin and salicylic acid were used. Under this treatment the thickening of the epidermis improved; but upon the discontinuance of the remedies the disease soon regained its former condition; as the girl was less troubled by the disease than the local remedies, treatment was suspended. The affection now remains as described. Mr. Hutchinson, who saw the case, agreed with the author in assigning arsenic the position of the causal factor, stating, also, that he considered local hyperhidrosis to be sometimes the result of the administration of arsenic.

**On the Treatment of Sebaceous Cysts.**—Lutz (*Monatshefte für Praktische Dermatologie*, Nr. 12), after speaking of the method of treating sebaceous cysts by excision as being almost universally regarded as the ideal way of dealing with these tumors, states that in small cysts this method is easy, but in larger growths the little operation demands a disproportionate amount of time and trouble. If the cyst-wall be very thin, as it is apt to be about the eye and in the cheek, the operation becomes still more difficult. For such cases he suggests a simpler and equally efficacious method. This method substitutes incision with subsequent destruction of the sac-wall in the place of excision. This plan is especially to be com-



mended in those cases where a steatoma has already suppurated. The writer relates two cases in which suppurating sebaceous cysts were treated by first incising and emptying them, and then scraping them out with the sharp spoon, following this by the application of tincture of iodine. In one of these cases the incision was healed with a small linear scar in twenty-four hours. After several years there was no tendency to a re-formation of the cyst. The method by incision can usually be made equivalent to excision, as often in scraping out the contents the cyst-wall will come away at the same time, or, failing this, slight traction with forceps will frequently remove it. In any event a thorough application of iodine will destroy it. The author strongly recommends this treatment in all small, thin-walled cysts.

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## HYGIENE AND BACTERIOLOGY.

IN CHARGE OF A. C. ABBOTT, M.D.,

First Assistant in the Laboratory of Hygiene, University of Pennsylvania.

At a meeting of the Medical Society of the Hospital Charité, at Berlin, held January 7, 1892, some important contributions upon the bacteriology of influenza were made, of which the following are abstracts:

Pfeiffer: Vorläufige Mittheilung über die Erreger der Influenza. (Preliminary Contribution upon the Cause of Influenza.) From the Institute for Infectious Diseases at Berlin. (*Deutsche Med. Woch.*, January 14, 1892.)

Pfeiffer examined in all thirty-one cases of influenza bacteriologically, and, of these, six gave results which, he thinks, justify him in claiming that he has detected, isolated, and cultivated the organism that plays the etiological rôle in the production of this malady.

His statements in regard to the work, in so far as it has developed, are as follows:

In all cases of influenza there exist in the purulent bronchial secretions bacilli of definite morphology. In uncomplicated cases the bacilli can be seen in "*absolutely*" pure culture, and usually in enormous numbers. They usually occupy the protoplasmic bodies of the pus-cells.

This bacillus has only been found as an accompaniment of influenza, and though other pulmonary affections, such as bronchial catarrh, pneumonia, and phthisis, have been studied, still the organism has always been absent from them unless they were associated with influenza.

The bacilli appear in gradually-increasing numbers as the disease advances, and disappear as the bronchial secretions diminish. They are exceedingly small. They are frequently found joined by the ends in short chains of three and four individual cells. They do not readily stain with the ordinary solutions of the basic aniline dyes, but may be satisfactorily colored by heating them in dilute solutions of carbofuchsin or Löffler's

alkaline methylene-blue solution. When stained the coloring-matter is seen to be taken up most intensely at the poles of the rods, the central portion remaining more or less colorless, so that a single rod may in this way often be mistaken for a pair of diplococci, or a short chain of rods for a chain of streptococci.

They do not stain by the method of Gram, and when examined in the unstained, living condition, are found to be without the power of independent motion.

They can be cultivated in pure culture upon nutrient agar-agar to which 1.5 per cent. of grape-sugar has been added. When grown on this medium, the colonies appear as very minute watery points, often so small as to necessitate the employment of a hand lens for their detection.

The organism is not particularly vigorous when growing artificially, and for this reason the methods employed by Pfeiffer did not enable him to carry his cultures beyond the second generation.

Experiments upon animals show that apes and rabbits are susceptible to the pathogenic activities of the organism, whereas guinea-pigs, rats, pigeons, and mice possess natural immunity against the disease.

From the above observations Pfeiffer feels justified in considering this organism the etiological factor in the production of influenza.

He believes the disease to be transmitted by means of the bronchial secretions that have been thrown off by expectoration and not properly disinfected.

Canon: Ueber einen Microorganismus im Blute von Influenza-kranken. (Upon a Micro-Organism in the Blood of Influenza Patients.) From the Government Hospital at Moabit. Ebenda.

Canon found the same organism in the blood of nearly twenty cases of influenza. By means of microscopic examination of the blood in several of these cases the diagnosis of influenza has been established when clinically there existed some doubt.

It is Canon's opinion that in all cases of influenza with elevation of temperature the organism can be found, and, as it has not been found in the blood from other conditions, it is his belief that the bacillus stands in some intimate relation to the disease.

His method of examining the blood for the presence of this organism is as follows:

A drop of blood is drawn by a needle-prick in the finger; it is then taken up upon a clean cover-glass and covered by a second cover-glass. The two glasses are then gently slid apart, and after drying in the air are immersed in absolute alcohol for five minutes, after which they are stained for from three to six hours at 37° C. in the following solution:

Concentrated watery solution of methylene blue.....	40 parts.
One-half per cent. solution of eosin in 70 per cent. alcohol.....	20 “
Distilled water .....	40 “



When the staining is complete the slips are rinsed off in water, dried, and mounted in balsam, when they are ready for microscopic examination.

Upon microscopic examination of the preparation the red blood-corpuscles are seen to be stained rose-color, whereas the white corpuscles and this bacillus will be found to be blue.

The blue-stained rods are often found in large numbers, though more frequently less numerous (from four to twenty rods in a preparation). The irregularity in the way in which these rods take up the coloring-matter gives to them at times the appearance of diplococci or streptococci, but frequently here and there more or less regularly-stained rods can be seen.

In six cases Canon found clumps of the organism in the blood.

Kitasato: Ueber den Influenzabacillus und sein Culturverfahren. (Upon the Bacillus of Influenza and its Cultural Peculiarities.) From the Institute for Infectious Diseases at Berlin. Ebenda.

By means of a method not yet made public Kitasato has succeeded in cultivating the organism described by Pfeiffer through as many as ten generations.

In regard to the cultural peculiarities of this bacillus, he remarks that the colonies growing from it on glycerin agar-agar are so minute that it is very easy to overlook them. This fact he thinks may serve to explain the failure of other observers to detect the presence of the organism.

The cultures of the organism upon the surface of glycerin agar-agar are conspicuous for the absence of any tendency to confluence of the colonies. They grow quite separated the one from the other. This is so characteristic as to serve as a means of diagnosis.

No growth occurs on gelatin, because of the low temperature at which it must be employed.

In bouillon at body-temperature it grows slowly in fine clumps, which sink to the bottom of the glass as a white flocculent precipitate, and leave the supernatant fluid clear.

Kitasato has never detected this organism in the sputum except in influenza.

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## PATHOLOGY.

IN CHARGE OF A. J. SMITH, A.M., M.D.,

Professor of Pathology in the Medical Department of the University of Texas, Galveston, Texas.

Metastasis of Malignant Tumors of the Kidney.—Brault (*La Sem. Méd.*, June 17, 1891), discussing the subject of renal cancers, takes up the question of their generalization. The fact that malignant tumors of the kidney are found not infrequently without any metastatic manifestation after years of growth has led a number of pathologists to attach special significance to these tumors. The writer, however, is disposed to look

upon the subject in a different light. He cites several cases, which presented secondary foci at times when the primary renal tumors were of relatively small size, in order to prove an occasional early metastasis; and endeavors to account for the usual tendency to strict localization upon anatomical grounds. These tumors are usually unilateral, generally begin at one end of the organ, and in large specimens it is rare to find any portions of entirely normal renal tissue. From the point of origin the growth gradually extends by direct invasion of the surrounding structures and is only limited in many cases by the more resistive capsule of the organ, which usually becomes much thickened because of reactive inflammatory processes. The capsule of the organ in this manner becomes the capsule of the tumor, and in the thickening process becomes more and more of a barrier to extension by every other path than the vessels at the hilus. Eventually in any tumor it is quite possible for the tumor elements to penetrate into the renal vein: and thus to be occasionally carried off to act as foci of metastasis; but, in comparison with similar tumor-formations in other portions of the body, this is apt to occur relatively late in the life of the patient and infrequently, even in the soft medullary growths, the tumor having as a rule but a single venous channel of communication with the general circulation.

**Tubular Epithelioma.**—This term is applied by Formad (*Trans. Phila. Path. Soc.*, vol. xv. p. 327) to a class of tumors arising from epiblastic epithelial glands, as the salivary glands, resembling in their general histology that of ordinary carcinomatous new formations. They differ from the true carcinomata, however, in their evincing a very much slighter tendency to general metastasis, spreading by a gradual infiltration of the neighboring tissues as usual among the epiblastic epitheliomata. They further persist in their epiblastic type in that they present as a feature of their histology epithelial nests here and there among the cell masses. The remarks before the Philadelphia Pathological Society were based upon a specimen of the tumor obtained from the body of a negro man, aged twenty-four years, dead as the result of the devastations of the neoplasm, which in this instance had originated in the sublingual gland. At the autopsy it was found extended to the submaxillary and parotid glands, involving all the structures at the base of the tongue, about the larynx and pharynx, upward to the soft palate and into the base of the skull. It followed the œsophagus downward, infiltrating its serous coat, the posterior mediastinal space, and all over the upper surface of the diaphragm.

**Examination of Sputum by Sections.**—There is no doubt that the methods employed in the preparation of cover-glass specimens of sputum are liable to destroy any delicate structural elements it may contain. In order to obviate this loss of material which might prove of diagnostic value, Gabritschewsky (*Deut. Med. Wochenschr.*, October 22, 1891) suggests that sputum should be hardened, cut, and mounted in sections. Of course



the thin glairy specimens are not suited to such a procedure; but the heavy nummular masses may be fixed and hardened without much difficulty in the ordinary media, as Müller's fluid, alcohol, Flemming's fluid, strong solutions of mercuric chloride, and picric acid. Of these perhaps the least suited is Müller's solution. As the sputum is expectorated it is dropped into the hardening fluid, and when of proper consistence is embedded in celloidin, cut, stained, and mounted. The author is in the habit of using the ordinary stains, safranin, alum carmine, hæmatoxylon, eosin, etc.; he states that in a large proportion of cases of phthisis he is able to demonstrate giant cells in the sputum by this mode of procedure.

**Senile Changes in the Osseous System.**—In a paper introducing this subject for discussion before the pathological section of the British American Association, held at Bournemouth in last July, Mr. Eve (*British Medical Journal*, December 5, 1891) referred to the changes which are to be found in the long bones and in the bones of the skull in old age. In the long bones the chief structural alteration is a central atrophy shown by enlargement of the medullary canal and atrophy of the cancellous tissue, together with thickening of the periosteum and slight osseous deposit beneath it, causing the surface to be somewhat roughened and the outlines somewhat sharper than in earlier life. The writer refers briefly to the structural changes in the bones of the face and the jaw, particularly in relation to the atrophic changes in the alveolar processes. So far as the bones of the skull are concerned, although atrophy is not uncommon, perhaps, as a rule, thickening and hypertrophy are to be found, even though the rest of the skeleton be atrophied. In some skulls the parietal bones are apt to present atrophic grooves and patches, sometimes of considerable extent and clinical importance; but this is not by any means constant, and in Mr. Eve's opinion its cause is not established. Seeking for an explanation of these changes the author is particularly struck by the similarity of structure of the bones of the calvarium in cases of granular kidney, which, in advanced disease of the kidneys with vascular fibrosis, become unduly heavy, dense, and thick. By analogy Mr. Eve suggests that the senile changes are due to similar causes, the same class of changes being evident in senility. There is a deposition of osseous tissue on the internal table associated with a connective-tissue formation on the outer surface of the dura mater; and an interstitial thickening of the bone results from ossification around arterioles affected by periarteritis. This deposition on the surface of the inner plate of the skull is entirely similar to the deposition on the surface of the long bones causing their roughening, arising probably from the thickening and ossification of the membranes covering them; while in osseous structures not covered by a membrane, as in the medullary cavity of the long bones, the thickening of the coats of the vessels by obstructing their lumina leads to degenerative, atrophic changes, as seen in the absorption of the medullary substance of the long bones.

A Chromogenic Micro-Organism in Herpes Labialis.—W. St. Clair Symmers, working in the pathological laboratory of the University of Aberdeen (*British Medical Journal*, December 12, 1891) publishes a preliminary note upon the discovery of a bacillus in the lymph of herpetic vesicles which developed on the lip of a boy affected with a typical acute croupous pneumonia. It grows well on a number of media, and on certain nutrients elaborates a pea-green color which permeates the medium. It grows at ordinary temperatures, but best at 100° F.; it is a facultative anaërobin; but only in contact with oxygen does the color become manifest. In general the micro-organism fails to produce the chromatic substance upon acid media and upon carbohydrates, the most brilliant color developing upon neutral or alkaline agar, glycerin agar, gelatin, bouillon, blood-serum, etc. The microphytes present under the microscope as rods or filaments. Free spores do not occur as a rule, but by special circumstances of cultivation may be developed within the rods or as terminal bodies like those of the tetanus-bacillus. The author has not as yet been able to separate the color in a pure form. In melted gelatin it is green by reflected, straw-color by transmitted, light. In course of time, after the culture is several weeks old, it changes color, becoming like burnt sienna, and still later assumes a crimson tint in addition to the sienna. Both mineral and organic acids discharge the color without destroying it, as upon neutralization it returns. Alkalies, particularly ammonia, intensify it; and where it is suspected, but from the nature of the medium it does not develop, the addition of ammonia renders it evident. It is insoluble in chloroform, thus differing from pyoseyanin. It seems to be identical with the pigment developed by the *bacillus virescens* of Frick; but the micro-organism in question differs from the latter in that it liquefies gelatin, a feature not possessed by Frick's bacillus. The author differentiates it also from *bacillus fluorescens liquefaciens*, which never forms threads or grows into filaments, is purely aërobic, spores are not observed, thrives badly at higher temperatures (100° F.), and liquefies gelatin slowly,—in all of which points it differs from the bacillus of Symmers. The micro-organism in its own mass is not green but colorless. On rabbits and white rats the bacillus appears to have pathogenic influence, inducing patches of alopecia and ulcerations when injected subcutaneously. The author applies the term *bacillus viridans* to the germ.



# FORENSIC MEDICINE.

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IN CHARGE OF LORENZO D. BULETTE,  
Of the Philadelphia Bar.

## *LEGAL LIABILITY OF ONE HOLDING HIMSELF OUT AS COMPETENT TO TREAT DISEASE.*

THE numerous instances from time to time brought to public notice of the unnecessarily fatal results following the pretended medical treatment of the sick by a class of persons who, under various appellations, and by virtue of the alleged existence in themselves of some occult power or influence, hold themselves out as competent to treat disease, have led to frequent inquiries as to the liability, civil or criminal, of this class of practitioners. A definition, therefore, setting forth the legal requirements of the medical practitioner, and also of what, in contemplation of law, constitutes a school or system of medical practice, will serve not only to show the legal status of the incompetent practitioner, but to suggest the remedy against such abuses as well.

The case of *Nelson vs. Harrington*,<sup>1</sup> which was an action for malpractice against a spiritualistic and clairvoyant physician, admirably illustrates the application of the legal principles that define and fix the civil liability in this class of cases. At the trial of this action, which was for the negligent and wrongful treatment and not for breach of the implied contract of employment, it appeared that about September, 1885, the defendant, who for several years previous had held himself out as competent to treat such diseases of the human body as physicians in good standing are usually called upon to treat, and also gave out that he possessed some mysterious power, insight, or skill not possessed by physicians in general, which enabled him to cure diseases generally considered incurable, and more speedily and effectually than physicians in good standing and repute, was called in by the father to treat his son, the plaintiff, a lad about fifteen years of age, who was afflicted with some disease of his right hip. It also appeared that the defendant undertook as a physician to treat the plaintiff and care for him in a skilful manner; but, without making a proper examination, such as physicians of ordinary skill would have made, pronounced the disease to be rheumatism, when it was really a disease of the hip-joint, which has well-known characteristic symptoms that a physician of ordinary skill would at once detect; that he negligently treated the plaintiff for rheumatism, encouraging him to use his right leg in walking, telling him that he was getting better in face of the fact that he was becoming worse, until

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<sup>1</sup> 40 N. W. Rep. 228.

January, 1886, when he lost the use of his right leg entirely, and other physicians were called in, and by the most persistent and thorough treatment the plaintiff recovered to some extent the use of his leg, but will be a cripple for life.

The defendant, in his answer, sought immunity from the consequences of his incompetent treatment by the fact that he was employed by the plaintiff to be treated, and he so treated him, strictly in accordance with the system of practice employed by spiritualists and clairvoyants in diagnosing, attending, and prescribing for diseases of the human body, and not in any manner as an ordinary physician and surgeon, possessed of the ordinary knowledge and skill of physicians and surgeons in the regular schools of practice. The plaintiff, at the trial, obtained a verdict and judgment, which was affirmed, on appeal to the Supreme Court, in an able opinion by Mr. Justice Lyon.

Malpractice, in the case of a physician, or one holding himself as such and competent to treat disease, may result either from original lack of the requisite medical and surgical knowledge and skill, or from the failure to apply such knowledge in a skilful manner, in the treatment of his patients, according to the school or system of medicine to which he professes to belong. In either case he will be equally liable for the injurious results thereby occasioned.

This leads us to examine, *first*, the legal requirements as to knowledge and skill necessary for the medical practitioner, and, *second*, as to what in contemplation of law constitutes a school or system of medical practice.

In the *first* case, the general rule of law prescribing the qualifications and defining the duties of the medical practitioner is, that a physician or surgeon, or one holding himself out as such, whether duly licensed or not, must, when he accepts an employment to treat a patient professionally, exercise such reasonable care and skill in that behalf as is usually possessed and exercised by physicians and surgeons in good standing of the same system or school of practice, having due regard to the advanced state of medical or surgical science at the time; and, in cases of doubt, he must use his best judgment,—not his ordinary or reasonable, but his best, judgment.

The purpose of this rule is to protect the health and lives of the public, particularly of the weak and credulous, the ignorant or unwise, from the unskilfulness or negligence of medical practitioners, by holding them liable to respond in damages for the results of their unskilfulness or negligence. It has its foundations, therefore, in the most persuasive considerations of a sound and enlightened public policy.

In the *second* case, in order to constitute a school of medicine, in contemplation of the law, it must have rules and principles of practice for the guidance of all its members, as respects principles, diagnosis, and remedies, which each member is supposed to observe in any given case. Accordingly, any competent practitioner of any given school would treat a given case substantially the same as any other competent practitioner of the same



school would treat it. One school may believe in the potency of drugs and bloodletting; another may believe in the principle *similia similibus curantur*; still others may believe in the potency of water, or of roots and herbs; yet each school has its own peculiar principles and rules for the guidance of its practitioners in their treatment of diseases.

The defendant, as the testimony shows, did not belong to or practise in accordance with the rules of any existing school of physicians, governed by formulated rules for treating injuries, to which rules all practitioners of that school are supposed to adhere. His method of diagnosis consisted in voluntarily going into a sort of trance condition, and while in such condition to give a diagnosis of the case, and prescribe for the ailment of the patient thus disclosed. He made no personal examination, applied no tests to discover the malady, and resorted to no other source of information as to the past or present condition of the plaintiff. He did not even profess to be educated in the science of medicine; but trusted implicitly to the accuracy of his diagnosis thus made, and of his prescriptions thus given.

The law does not inquire into the manner in which a physician obtains his medical knowledge and skill; it only requires that he have a competent amount of it, and that he apply it with reasonable care at every stage in his treatment of a patient. Neither does the mode in which a physician acquires a knowledge of his profession have anything to do with his school or system of practice. One may obtain such knowledge from certain books; another from certain other books which perhaps teach different principles; still another from lectures, or from experience alone; and still another from his intuitions when in an abnormal mental state; yet these differences do not necessarily constitute separate schools of medicine. The clairvoyant and the homœopathic, or the allopathic physician may belong to the same school or system, provided they adopt the same principles and observe the same rules of treatment. The methods by which a man acquires a knowledge of medical science is one thing, and the principles which govern him in the practice of medicine is another and very different thing. This is just the difference between clairvoyant physicians as a class and the practitioners of a school of medical practice recognized in the rule of professional ability above laid down. The regular physician of any recognized school of medicine acquires his professional knowledge by the study of the general principles of the science and applies such knowledge to each particular case as it arises; while the clairvoyant physician may have no such general knowledge, but believes himself especially and effectually educated to treat each particular case as it is presented to him, without reference to any particular system or school.

No testimony was offered to show that clairvoyant physicians as a class follow any formulated rules which have been prescribed and which each practitioner is supposed to follow in the treatment of disease, as is the case with the practitioners of the recognized schools or systems of medicine. While clairvoyant physicians have a common mode of acquiring their

knowledge of cases, their methods of treatment may be contradictory and as numerous as are the practitioners, and no principle or rule of clairvoyant practice be violated thereby. The proposition, therefore, that one holding himself out as a competent medical practitioner, and who accepts a person as a patient and treats him for disease, may, because he resorts to some peculiar method of determining the nature of the disease and the remedy therefor, be exonerated from all liability for unskilfulness on his part, no matter how serious the consequences, cannot be entertained. Such a proposition if accepted as true would contravene a sound public policy.

The general rule of professional duty above stated requires that one holding himself out as a physician exercise the same skill and care as is ordinarily exercised by physicians in good standing, who belong to the same school of medicine and practise under the same rule.

The responsibility for malpractice must be on the head of the practitioner; it matters not that the plaintiff or those responsible for him, know such practitioner's methods of treatment; nor can they be charged with contributory negligence in making such selection with a previous knowledge of the practitioner's methods. One holding himself out as a competent medical practitioner must be held liable in damages for any injury proximately caused by unskilful treatment of his patient. This is the rule applicable to all who hold themselves out as experts in any professional art or trade. The law does not concern itself with their sources of knowledge, their tools or methods of work, but concerns itself only with results. Accordingly, if one who holds himself out as competent and accepts employment to treat diseases, but who relies exclusively for diagnosis and remedies upon some occult influence exerted upon him, or some mental intuition received by him when in an abnormal condition, he must in like manner take the consequences of the quality or accuracy of such influence or intuition. If these move him so imperfectly or inaccurately that, although he pursues the course of treatment thus pointed out or indicated to him, he fails to treat the patient with reasonable skill, he is liable for the consequences. The law does not concern itself with the quality of the mechanic's genius or with the reality or nature of such alleged occult influence or intuition which controls the physician in his treatment of his patient. It takes cognizance of but one question,—Did the practitioner or expert render the service he undertook in a reasonably skilful manner?

The illustrative case here selected, although it is the determination of a court of but one State, nevertheless embodies the rules of law by which all the courts are guided in similar cases. All practitioners of medicine and surgery must, therefore, exercise in their practice the reasonable skill exacted by the rule of professional liability above laid down; and if any one holding himself out as competent, and accepting employment, to treat diseases of the human body, fails in any respect to meet the requirements of that rule, he is liable in damages to the injured patient for all injuries directly caused by such failure.



## BOOK REVIEWS.

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INTERNATIONAL CLINICS: A QUARTERLY OF CLINICAL LECTURES. Edited by J. M. Keating, M.D., J. P. C. Griffith, M.D., J. M. Bruce, M.D., F.R.C.P. (Eng.), and D. W. Finlay, M.D., F.R.C.P. (Eng.). October, 1891. Philadelphia: J. B. Lippincott Company, 1891.

The series of which this is the third volume has, by the worth of the two preceding numbers, created an enviable and unique position in medical journalism. The *International Clinics* has been established upon a most reputable basis, and when it may be said of a volume of the series that it maintains the grade of its predecessors the commendation is necessarily a high one. The present volume really occupies such a position, both so far as the character of the contents are concerned and the professional respectability of the contributors may indicate. The endeavor thus to centralize the best clinical teaching the English language possesses has from the first gained the kindly feeling of our best teachers, and the wealth of material at the disposal of the editors evinces the popularity of the publication with this class of the profession. On the other hand, a careful endeavor on the part of your critic to obtain the views of a large number of practitioners within his ready reach, practised without indicating its purpose, has justified the opinion that the work is bound to reach a high degree of popularity with the medical profession.

The present number of the work contains about forty clinical articles, either lectures or, as in a few cases, specially-prepared papers upon clinical subjects, the whole number being divided over the sections of medicine, surgery, genito-urinary and venereal diseases, gynæcology and obstetrics, neurology, ophthalmology, otology, laryngology, and dermatology. An exceedingly interesting paper, the abstract of a clinical lecture by Professor W. J. Gairdner, of Glasgow, is contributed upon the subject of acute intestinal obstruction, particularly dealing with the question of prognosis in relation to the symptoms of stercoraceous vomiting and the possibility of spontaneous recovery. Having premised the subject of his lecture by reference to certain statements of Dr. B. W. Richardson as to the importance of the symptoms and the necessity for operating upon its appearance, Dr. Gairdner devotes his attention to the proof of two objections he makes to Dr. Richardson's statements,—that spontaneous recovery is possible after stercoraceous vomiting has begun and has continued for some time; and that acute obstruction may not be accompanied by any stercoraceous vomiting at all, or only at a time when operative procedures are obviously too late. Dr. Gairdner's view of the matter is undoubtedly a correct one and is one which will meet the approval of many physicians; but it is questionable whether the logical end of the argument suggested by his propositions and the cases cited in corroboration would not lead to a higher grade of mortality than would Dr. Richardson's invariable rule of operation in the beginning of every case of stercoraceous vomiting. Perhaps the best of the medical papers in the volume is that of Goodhart and Carpenter upon tubercular peritonitis in children, and its treatment. The paper is based upon the records of thirty-one cases, of which fifteen are known to have died, six are doubtful, and ten are at present living and, as far as is known, in fair health. In the treatment of these cases the chief measures were cod-liver oil, maltine, careful diet,

and rest in bed, together with the usual line of drugs employed in these cases. The writers look favorably upon the operative treatment of tubercular peritonitis, but would limit it to selected and rare cases. Of the section upon surgery perhaps the greatest interest will centre upon Smith's remarks upon suturing the fragments of the patella in case of simple fracture; upon the favorable results obtained by Wyeth, following the combination of Valsalva's and Tufnell's methods in a case of aneurism by the insertion of pins into the cavity of the aneurism and the scratching of the inner wall to favor clotting; and the discussion of several congenital formations of the head and spine by Keen. The section upon neurology is unquestionably the best in the book; it is opened by a lecture by Professor Da Costa upon malarial palsy, in which he divides these palsies into three clinical varieties, the most common a general paralysis or a paraplegia with irregular symptoms, a form in which the periodicity of the paralysis is striking, and which is usually hemiplegic, and, finally, the form of rarest occurrence in which actual organic cerebral or spinal lesion is produced by the malarial poison, and which is nearly identical with ordinary paralysis in its course. The position of excellence in this department easily belongs to the consideration of permanent headaches,—headaches of long duration,—by Dr. S. Weir Mitchell. An excellent summary of this lecture may be given in one of Dr. Mitchell's paragraphs: "I find nothing more difficult to talk about than headaches in general, and when I come to speak of what I call permanent headaches, I have little to recall which is encouraging. To shut out lithæmic states involves far more labor than is usually imagined, nor can it always be surely done, and gout is full of surprises for the most careful. But if we are fairly certain it is not gout in any form which is to blame, and can feel secure that the kidneys are sound, the nasal passages healthy, the eyes not in fault, and made sure that there is no syphilis, what have we left? I have said that permanent headaches of the type of migraine are rare. Nevertheless this does not absolve us from the need to know if the eyes are in order and also if the general line of health be high. In fact, no man has completely dealt with the therapeutic possibilities of a headache case until he has seen to it that the health be in the highest state attainable for that individual, and I, at least, can recall many instances in which success was won in this direction where mere use of single drugs had failed." One of the finest and best-selected series of illustrations in recent medical journalism accompanies the lecture of Dr. Francis X. Dercum on adult chorea; the combination of the conversational style of instruction with such pictures lends a distinctness to the written discourse which would otherwise be impossible to give by mere words. The more extended use of illustrations in the journal will probably follow examples such as this of Dr. Dercum's.

One must regret the inability to devote space to more of the articles in the volume; properly to consider each would consume far more room than a journal can well afford. One man may write a book to elucidate a few opinions and the reviewer devotes his attention to these opinions in their brevity, but where forty men with brains combine to write a book, the reviewer can but group them or treat of few. One can but say that the entire volume is a success, that it accomplishes well its object to draw the practitioner constantly near the teacher of medicine, and that, while some papers are perhaps worse than those mentioned,—otherwise, how could one speak of the average?—the average of excellence is exceedingly high.

A. J. S.

DISEASES OF THE MOUTH IN CHILDREN. (NON-SURGICAL.) By F. Forchheimer, M.D., Professor of Physiology and Clinical Diseases of Children, Medical College of Ohio; Member of Association of American Physicians and American Pediatric Society, etc. Philadelphia: J. B. Lippincott Company, 1892.

This small volume of two hundred pages, which consists of an elaboration of a series of articles which appeared in the *Archives of Pediatrics*, only increases the



confidence which we have had in the writings of Dr. Forchheimer. The book is an effort to remove some of the confusion attendant upon the description and nomenclature of the various non-surgical diseases of the mouth. As the author tells us in the opening pages, nearly every form of sore mouth was in former years called aphthæ, while later no less than sixteen varieties of aphthæ were described. He then briefly discusses the secretion of the saliva in children, referring to the fact that up to the age of three or four months the mouth is comparatively dry and the tongue always more or less coated; and that after this age, although saliva is secreted in abundance, but little of it is swallowed. This state of affairs has, of course, an important bearing upon dietetics. He much prefers a spoon as a tongue-depressor; a predilection with which we largely sympathize.

The diseases of the mouth he divides into seven varieties of stomatitis,—viz., catarrhalis, aphthosa, ulcerosa, mycosa, gangrenosa, crouposa (and diphtheritica), syphilitica. One of seven chapters is allotted to each of these. While etiology, symptoms, and treatment are fully discussed, we think it would have been a distinct addition had the chapters also contained sections upon differential diagnosis, in which the most characteristic symptoms would have been especially emphasized.

In the production of stomatitis catarrhalis the author says that two factors are always to be considered,—an irritant and the condition of the mucous membrane. Thus, stomatitis is as often the cause as the result of a weak state of health and defective nutrition. He calls attention to the difference between the true catarrhal condition and the simply erythematous. Treatment is discussed quite fully, particular emphasis being laid upon the necessity of systematic but *gentle* washing of the mouth of every child, several times a day, as a matter of prophylaxis. Chlorate of potash he deems valueless in this form of trouble, and places reliance upon nitrate of silver, in weak solution.

He passes in review in the next chapter the confusing history of stomatitis aphthosa, and carefully defines his own idea of the affection, from which he sharply separates thrush. Had all writers done the same much unnecessary confusion would have been avoided. Herpetic stomatitis he includes in the aphthous variety, and believes that aphthous spots are really vesicles. He has had a series of bacteriological investigations conducted which failed to reveal any micro-organisms peculiar to this disease. His studies lead him to disbelieve that aphthæ has any connection with any affection of cows. It is to be remarked that the evidence of some other observers is strongly in favor of the possibility of such a connection. In this form of stomatitis, also, Dr. Forchheimer is opposed to the employment of chlorate of potash. The curious affection known as Bednar's Aphthæ, which appears to be the result of violent cleansing of the infant's mouth, is included in this division of the subject.

Stomatitis mycosa, or thrush, likewise receives extended consideration. The chapter opens with an interesting, short historical sketch, including the studies made by various investigators regarding the nature of the parasite. The author concludes that, as far as our present knowledge goes, the fungus is a *saccharomyces* and not an *oïdium*. He details several interesting cases in confirmation of the experience of others in the eminently contagious character of the affection; but at the same time cites other instances which indicate that the mucous membrane of the mouth must be in a proper condition to act as a nidus for the fungus. As regards treatment, he condemns "the orthodox borax and honey mixture," and relies almost solely on the mechanical removal of the parasite, and on the local employment of a solution of bicarbonate of soda.

Dr. Forchheimer accepts the view of Bohn, that without teeth there can be no stomatitis ulcerosa. He limits the affection to the ulceration beginning about the teeth,—as it is seen in one of its forms, mercurial stomatitis. Imperfect hygiene and poor general health are powerfully instrumental in its production. He regards

chlorate of potash given internally as a specific in acute cases, and nitrate of silver, locally applied, as the remedy for the chronic form.

Space is lacking to review even thus briefly the articles upon gangrenous, diphtheritic, croupous, and syphilitic stomatitis. It is worthy of note that the author believes that the diphtheritic and croupous processes are essentially different. This may be true regarding the affection of the larynx, but we question whether most observers will admit the existence of a distinct croupous stomatitis.

The succeeding chapter, upon dentition, is a long and important one. Dr. Forchheimer gives an interesting account of some of the different views held upon the subject from the time of Hippocrates down. Then, after discussing the physiology of the process, he puts into convenient tabular form the various ages assigned by different authorities for the eruption of the teeth, in order to show how widely opinions differ on the subject of normal teething. He is strongly of the opinion that teething, a normal process, is entirely without influence on the causation of disease; and that the profuse secretion of saliva occurring at the third or fourth month has no physiological connection whatever with dentition. He holds that "teething produces teeth and nothing more." He is totally opposed to the custom of lancing the gums, on the ground that it not only never does good, but that it frequently is productive of harm. We do not know that the author is entirely correct in his position, which may seem rather extreme, though he has entrenched himself behind some very strong arguments.

The last two chapters are devoted to the tongue and mouth in disease of remote parts, and to epidemic parotitis. The former contains considerable instructive matter regarding the condition of the tongue and mouth in such affections as pertussis, measles, scarlatina, bronchitis, and the like; the cause of a white or a yellow coating of the tongue, etc.

Dr. Forchheimer's book shows throughout evidence both of extended literary research and of close personal observation. We can do nothing else than highly recommend it.

J. P. C. G.

**THERAPEUTICS: ITS PRINCIPLES AND PRACTICE.** By H. C. Wood, M.D., LL.D. A Work on Medical Agencies, Drugs, and Poisons, with Especial Reference to the Relations between Physiological Action and Clinical Medicine. Eighth Edition. Philadelphia: J. B. Lippincott Company, 1891.

To many members of the medical profession, both in this country and abroad, the name of H. C. Wood is so familiar, either from his physiological writings or from his connection with the United States Dispensatory and his own work upon Therapeutics, that it is not necessary for us to speak of the eminent ability which he brings to the completion of the eighth edition of his standard treatise.

There is probably no book in the English language which so thoroughly considers the literature of the physiological action of drugs as does that of Dr. Wood, and there is certainly no work which attempts to bring together a larger number of apparently contradictory facts and render them non-contradictory by careful examination of each author's papers. Unlike one or two other large works upon *materia medica* in which physiological action is fully considered, Dr. Wood has so bound together his various researches that a jointed and easily-read page is the result.

In the present edition the plates of the book have been sufficiently altered to enable him to consider all the new substances which have been introduced into therapeutics which the test of a few months has proved to be of more or less value, and the work is in consequence a very good representation of therapeutic literature at the present day.

A review of the eighth edition of a book which is so well known as Dr. Wood's can scarcely be anything more than a book notice which informs the profession in general that its active author has found time to bring his work up to the highest notch



in modern therapeutics. The work is one which should be in the possession of every physician, and, while this term has become so hackneyed as to be almost meaningless, the book before us is one of those which must have originated the expression and to which the expression may be applied with perfect correctness.

**THE COMPLETE MEDICAL POCKET-FORMULARY AND PHYSICIAN'S VADE-MECUM.**

By J. C. Wilson, A.M., M.D., Physician to the German Hospital, etc. Philadelphia: J. B. Lippincott Co., 1892. Containing 260 pages, bound so as to fit readily in any ordinary pocket.

This little book, as collated for the use of practitioners by Dr. James C. Wilson, is indeed a physician's vade-mecum. It contains a vast amount of information and will be of great practical use to busy men. In compact form Dr. Wilson has brought together upwards of twenty-five hundred prescriptions, several valuable tables of dosage (at different ages), poisons and their antidotes, urinary tests, etc. That the material is thoroughly reliable can be easily demonstrated by reference to the long list of authors who have been consulted. In bringing together so many valuable facts from so many different sources, the author has accomplished a great labor of love for his fellow-workers and given abundant proof of persevering energy. The results of years of labor are thus brought together in most convenient form. The most attractive feature of the "Vade-Mecum" is the ease with which the formulary may be consulted. In less time than it takes to write it one can turn to diphtheria, for example, and see at a glance more than thirty-five prescriptions which have been employed by physicians of note in the treatment of this disease. Each is signed by the one who employed it, and by such means the name of some familiar writer will often suggest a consultation later, when a leisure hour permits, of this particular author's work on the subject. No practitioner will find, of course, all the prescriptions which he has read of or has used himself. But every one who examines this valuable little book will admit its practical usefulness.

**THE ANATOMICAL AND HISTOLOGICAL DISSECTION OF THE HUMAN EAR IN THE NORMAL AND DISEASED CONDITIONS.** By Dr. Adam Politzer, Professor of Otology in the Imperial Royal University of Vienna. Translated from the German by George Stone. Published by Baillière, Tindall & Cox, London.

Any work emanating from so able a worker in the field of otology as Professor Politzer bears crucial examination. We have gone over this book carefully, and with more than ordinary interest. For the student and advanced otologist this work is of inestimable value. For the student, the most careful dissections and their preparation are fully described. For the advanced otologist, the work gives an insight into the newest discoveries of pathological conditions of the ear. This work is bound to become *the* book of reference and authority on the subject. The translator has not had an easy task, and he must certainly be complimented upon giving to our profession a standard German work rendered into clear, concise, and terse English.

The book consists of two hundred and sixty-five pages, well printed, and illustrated with one hundred and sixty-four wood-cuts. There is also a chapter on the literature of this subject, covering a period of over three hundred years,—the first, Gabrielis Fallopii Medici Mutinensis *Observationes Anatomicae*, Coloniae, 1562, the last from *Verhandl. der Naturforsch. Ges. in Basel*, viii. Thiel, 3. Aufl., 1889.

L. W. F.

**CHARTS OF THE NERVO-VASCULAR SYSTEM.** Arranged by Drs. W. Henry Price and S. Potts Eagleton. In three folio sheets. Philadelphia: F. A. Davis, 1891.

With the yearly increasing burden of details confronting the student of anatomy every effort to smooth his stony way must be welcomed, even although this be attempted but for a limited portion of the wide range of the entire subject.

The three sheets comprising the set of charts before us present admirable tabular condensations of the nerves, arteries, and veins, so arranged that a glance suffices to recall the branches of any vessel or nerve. The grouping together of all the nerves—cranial, spinal, and sympathetic—on a single page is a feature, we believe, peculiar to these charts, and one of great convenience.

The merited popularity of these tables, necessitating a new edition, has given an opportunity for thorough revision, which the compilers have utilized to make such changes as seemed desirable.

G. A. P.

A TEXT-BOOK OF PRACTICAL THERAPEUTICS, WITH ESPECIAL REFERENCE TO THE APPLICATION OF REMEDIAL MEASURES TO DISEASE AND THEIR EMPLOYMENT UPON A RATIONAL BASIS. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Second Edition, Enlarged and Thoroughly Revised. Philadelphia: Lea Brothers & Co., 1891. 8vo pp. 658.

The fact that this book has reached a second edition within six months proves that there is a demand for a good modern hand-book on Practical Therapeutics. The volume before us, despite its many merits of design, does not meet the demand. Many of the errors and inaccuracies that detracted from the worth of the first edition have been corrected in the second edition, although there is still occasion for the free and judicious use of the blue pencil. The author's style is vigorous and dogmatic, but his meaning is frequently obscured by faulty syntax. The practitioner of judgment will find in the work many useful hints. The student or inexperienced practitioner will not be so readily able to choose these from among less useful matter.

S. S. C.

THE PRINCIPLES OF BACTERIOLOGY; A PRACTICAL MANUAL FOR STUDENTS AND PHYSICIANS. By A. C. Abbott, M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania. Philadelphia: Lea Brothers & Co., 1892.

This manual, which has been introduced as a text-book in the University of Pennsylvania, is an excellent hand-book of laboratory technique, treating practically of methods of investigation and omitting all theoretical matters. In the introduction, occupying about one hundred and fifty pages, there is a short description of bacteria, followed by accounts of methods of sterilization, disinfection, preparation of pure cultures, staining, inoculation of animals, post-mortem examinations, etc. In the last ninety pages, on "the practical application of the methods of bacteriology," water, air and soil, sputum, septicæmia, tuberculosis, suppuration, typhoid fever, anthrax, and diphtheria are studied. Wherever possible experiments to be made by the student himself are suggested and the manner of carrying them out is explained. The book is neatly made, quite profusely illustrated, and well indexed.

C. B.

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EDITOR.



# INTERNATIONAL MEDICAL MAGAZINE.

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## ORIGINAL COMMUNICATIONS.

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### *"CURETTAGE" OF THE UTERUS.*

BY THOMAS LINN, M.D.,

Nice, France.

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IT is proposed in this paper to give a condensed account of the present state of French surgeons' ideas in regard to "curettage" of the uterus.

Last year this operation came before the Société de Chirurgie, in Paris, for discussion. Professors Trélat,<sup>1</sup> Bouilly, Terrillon, Richelot, Terrier, and others, were unanimous in saying that it was of great value.

This favorable opinion gave a sort of official sanction to the operation of curetting the uterine cavity, and physicians all over the country undertook it, so that thousands of such operations have been performed within a short time.

We shall not enter into the question of the usefulness of the curettage itself, which is based on a rational physiological principle, and which, as is now admitted by all, has come to occupy an important place in gynæcological surgery. Our object is simply to state the present methods employed in France as briefly as possible, leaving the more important and underlying questions for more competent observers to discuss.

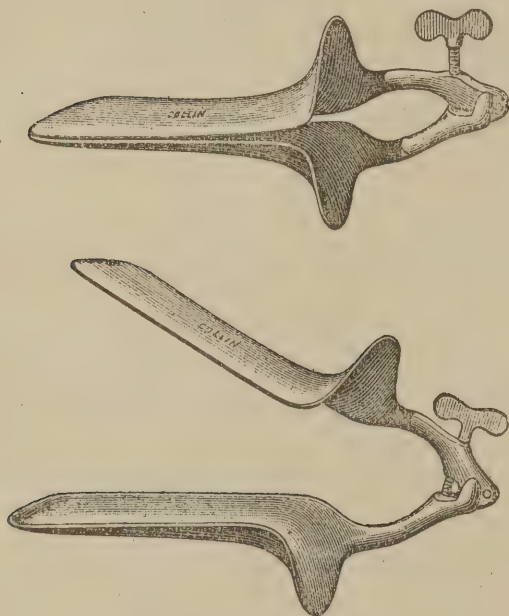
1. *The Preliminaries.*—All operators are agreed that anæsthesia is necessary but need not be long continued. However, it should be deep enough to produce muscular relaxation, so that bimanual palpation of the uterus can be readily performed. Chloroform is used in France. As to the attempts made to use cocaine they were found useless and are now abandoned.

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<sup>1</sup> Since dead.

2. *Dilatation of the Cervix Uteri.*—Some surgeons dilate with instruments, but many prefer *slow dilatation* with prepared antiseptic laminaria tents (sea-tangle tents); these having overcome the tenacity of the uterine muscular structure, metallic instruments are used to complete the operation. These tents are usually kept in a solution of iodoform and ether (1-10) until they are needed for use. They are prepared by being wound tightly with silk (saturated with corrosive sublimate solution), which prevents the tents swelling and keeps them soft. Before introducing them careful antiseptics of the vagina should be secured by large irrigations of bichloride solutions (1-2000). The *hysterometer* is then made use of to get the length, direction, and capacity of the uterine canal, so as to determine the size of the tent needed. This is done without passing a speculum, as such an instrument would prevent the necessary manipulation of the handle of the hysterometer. The speculum is then introduced, and many French operators prefer the one we illustrate (see Fig. 1), as the instruments of Cusco, Record, and Ferguson do not allow

FIG. 1.



A favorite bivalve speculum.

enough room for the passage of the tent. This simple form can be used without assistance. When competent aids are on hand the Sims or other single-valved speculums can of course be used. The tent is then held in position by filling up the posterior *cul-de-sac* with iodoformed gauze at first, and afterwards by *tamppons* of aseptic cotton. The patient is then allowed to go home, and even to be about the house. The tent is usually taken out the following day. The dilatation should be sufficient to permit the index-finger to pass into the uterus with ease. This is accomplished sometimes in

twenty-four hours, but more often it takes four or five days.

The day before the operation a purgative is given, and just a few minutes previous to anæsthesia an enema of glycerin and water. All the instruments necessary for the operation (mostly with metallic handles now) are put into a metal box and *sterilized* for half an hour at 140° Centigrade.

There are a number of ovens used for sterilizing. We illustrate (see Fig. 2) one designed by Dr. Poupinel, which is a simple form, and can be used with gas. It is quite easy to manage.

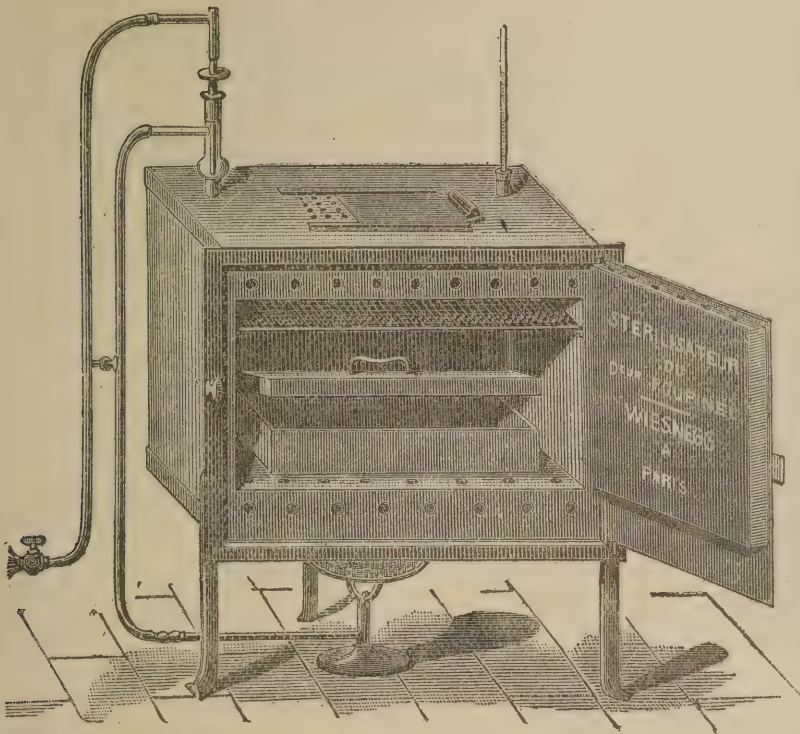
*Details of the Operation.*—Three assistants are employed; one to attend to the chloroforming only, the second to attend to the instruments, and a third to the dressings, etc.

The instruments are now taken from the metal box (see cut of the



oven) and put into boiling water. The parts to be operated upon are carefully douched a number of times with a solution of corrosive sublimate (1-1000).

FIG. 2.



For sterilizing the instruments.

Doléris's rubber bag irrigator (Fig. 3) is used mostly, as it is especially adapted for corrosive sublimate solutions.

The position of the patient is well shown in the accompanying cut. She is held in position by Dr. Auvar's strap, shown in illustration (Fig. 4), which accomplishes the purpose admirably.

A simple perineal valve, with a heavy ball weight on it, is placed in position on the vaginal floor and allowed to hang in position during the whole operation (Fig. 5). An ordinary single-valve speculum is then introduced and the anterior vaginal wall is drawn back, when the cervix is seen without any further trouble.

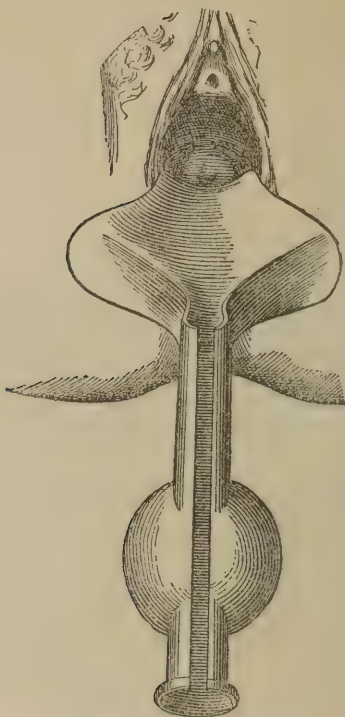
The cervix is then fixed (the prehension of the anterior lip being usually sufficient) by a pair of pinching tenacula. The instrument illustrated (Fig. 6) is a new one by Dr. Berlin, of Nice, which combines the usual form with an attachment for an irrigating tube, which is intended to douche the part continuously during the operation, without having to introduce another instrument for that purpose. The uterus is then drawn down by this tenaculum, and if the dilatation is not sufficient one of the metallic dilators can be used.

This is Sims's well-known trivalve (Fig. 7), and, while it is considered a powerful instrument by French operators, they mostly prefer either Hegar's style of bougies (Fig. 8), which can be easily sterilized, or else they

FIG. 3.

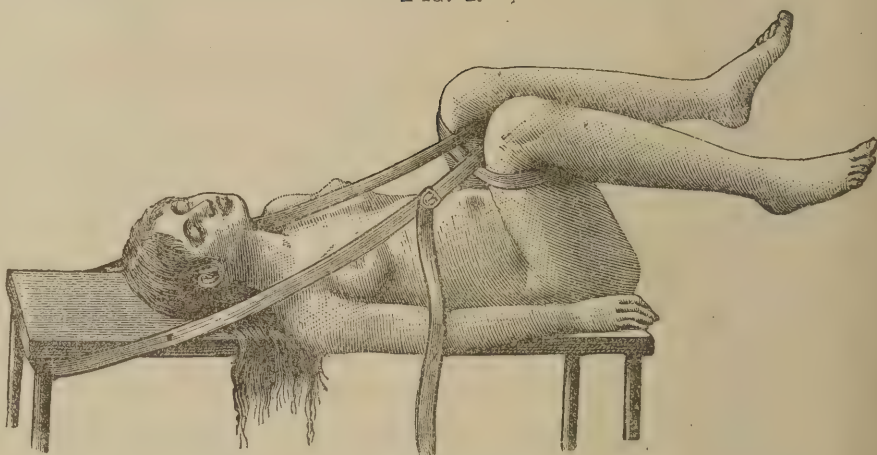


FIG. 5.

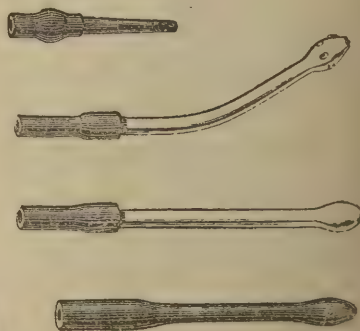


Heavy valve speculum.

FIG. 4.



Patient in position.

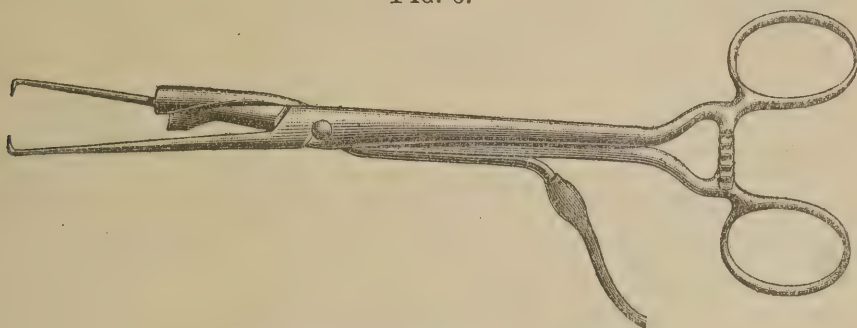


Dolérís's rubber bag irrigator.



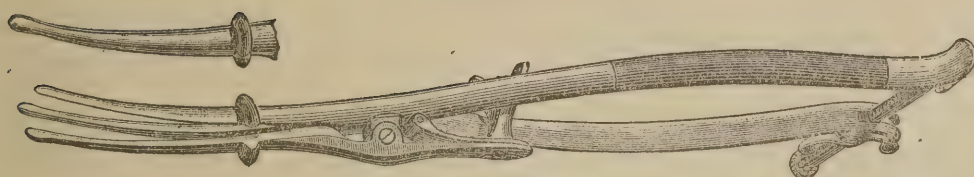
use Dr. Auvard's double-end dilator (Fig. 9), made with two sizes on each instrument.

FIG. 6.



The pinching tenaculum of Dr. Berlin.

FIG. 7.



Sims's trivalve uterine dilator.

FIG. 8.



Hegar's bougie.

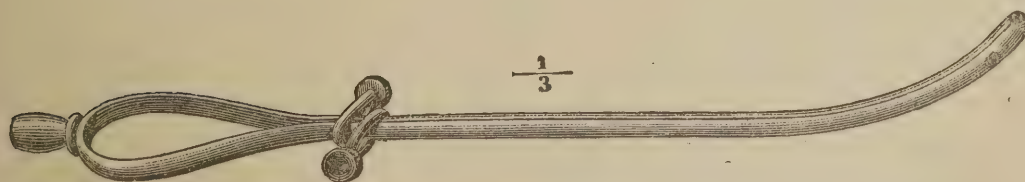
FIG. 9.



Dr. Auvard's double-end dilator.

When the cervix has been sufficiently dilated, an intra-uterine injection is employed to remove all *débris*, etc. For this purpose Budin's horse-

FIG. 10.

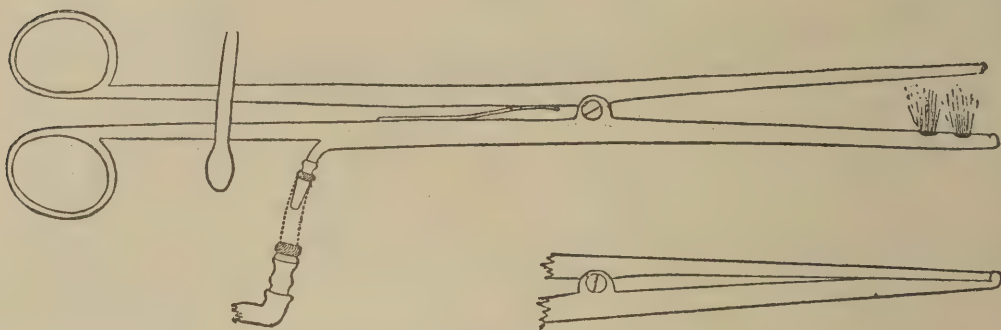


Doléris's irrigating uterine sound.

shoe sound is sometimes used, but Doléris's irrigating uterine sound (Fig. 10) is preferred.

Others use the irrigating sound of Dr. Reverden, of Geneva (Fig. 11). Simply opening the ends of this ingenious instrument allows the escape of the irrigating liquid, as shown in the cut.

FIG. 11.



Dr. Reverden's irrigating uterine sound.

This having been accomplished, the curettage itself begins; and this brings us to a consideration of the kinds of curettes to be used. When there is especial danger of perforation from the thinness of the uterine walls, the blunt kind are best used, as it is only necessary in such cases to scrape from the uterine walls some detritus that is not very adherent. But for regular gynæcological curetting the solid or fenestrated scoop, with edges so bevelled that it will scrape the surface clean, is used.

We illustrate the different kinds. The Simon or solid ones (Fig. 12) are mostly preferred to the open curette (Fig. 13), as they bring away more of the broken-down tissues, but both kinds are employed.

FIG. 12.



FIG. 13.



There is no danger in using either, *but the surgeon should always have the uterus well dilated, and see what he is doing.* While using a curette, it is considered indispensable that it be moved freely to any part of the cavity, and it *must never be caught at any point.* The quantity of blood lost is never considered by operators, as they know it will cease by continuing the operation. After carefully curetting every part with instruments of different sizes, it is usual to finish by the *curette for the orifices of the Fallopian tubes* (Fig. 14). This delicate instrument must be handled with great care, even by an experienced operator.

The French surgeons have a sign when to stop curetting by what they call the *cri uterin*. This uterine cry is both tactile and audible, felt by



the hand and heard by the ear. It is produced when the curette has scraped off the mucous membrane and is down on the muscular structure. This sign is not, however, easy to catch in a softened uterus after confinement.

FIG. 14.



Curette for the orifices of the Fallopian tubes.

After the curetting is over many operators use *écouvillonnage*, which is simply brushing the surface over with a hot instrument that is more or less impregnated with a caustic and antiseptic substance. Dr. Doléris's instrument is the one used (Fig. 15).

FIG. 15.



It is usual to have a fresh one for each case, which is sterilized before using and thrown away after the operation. A solution of glycerin and creosote (5-1) can be used for this purpose.

Some surgeons do not drain, but many pass a band of iodoformed gauze impregnated with glycerin into the uterus, pressing it in gently and allowing a portion to hang into the vagina, which is afterwards partly filled with the gauze. All the dressing is *intravaginal*, so that it shall not be soiled by the urine or any infection set up by the anal discharges. As a rule, there is an absence of fever after this operation. No food is given for the first twelve hours, then only a little milk and champagne. About eight to ten days' rest in bed is the usual time required after this procedure, although some women get about in much less time. Three days are allowed to elapse after the curetting before taking out the dressing, and this is renewed every five days afterwards for two weeks, injections of a (1-4000) solution of bichloride of mercury being used at each renewal of the dressing.

The indications for this operation are: First, retention of any part of the placenta; second, uterine hemorrhages; third, endometritis, fibroid tumors, cancer, catarrh, and sterility.

*NOTES ON CHROMOPHYTOSIS.*

BY GEORGE HENRY FOX, M.D.,

Clinical Professor of Diseases of the Skin, College of Physicians and Surgeons, New York.

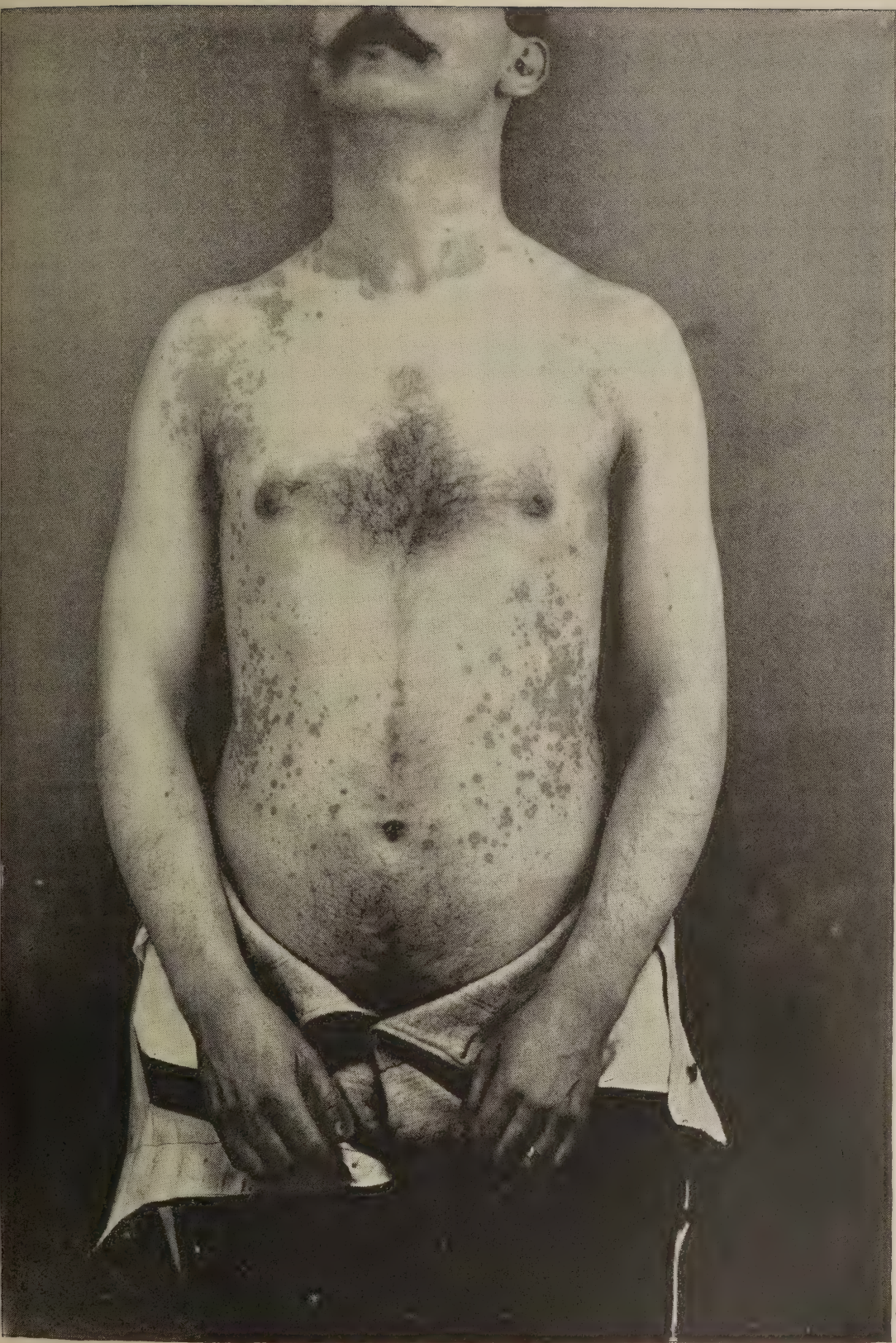
THE term chromophytosis is now commonly employed in this country to designate the parasitic affection of the skin which is known in England as *tinea versicolor*, and on the Continent as *pityriasis versicolor*. The name implies that the disease is the result of a fungous growth, and is characterized by a characteristic color. These peculiar features of the eruption are better expressed by a single name than by use of the term *phytosis versicolor*, which has also been employed as a synonyme.

Chromophytosis, trichophytosis (ringworm), and favus constitute the three cutaneous affections which are generally known to result from the presence in or upon the skin of a vegetable parasite. The peculiar fungus which causes chromophytosis (*microsporon furfur*) can be readily demonstrated by placing beneath the microscope a few epidermic scales scraped from the affected skin, as the spores are much larger than those which give rise to ringworm or favus.

When we consider the frequent occurrence of chromophytosis and the well-marked clinical features of the affection, it seems as though an error in diagnosis would be unpardonable. But the experience of every dermatologist shows that such errors are frequently made. It is a common idea among the laity, especially such as study the medical almanacs, that the disease is closely related to hepatic trouble, and this idea is strengthened by the use of the term "liver spots," which is applied to chromophytosis, as well as to *chloasma* or abnormal pigmentations of the skin. The same idea prevails among a certain class of physicians, who certainly ought to know better. Some regard the eruption as probably due to a syphilitic taint, especially if the moral character of the patient is not above reproach, while others ascribe it, with every other cutaneous eruption, to some impure condition of the blood. Hence it happens that chromophytosis—a purely local disease, one which affects only the most external portion of the skin, and has no more to do with the blood and internal organs than have grease-spots on the clothing—is frequently treated by arsenic, mercury, and a host of other internal remedies.

Of course such treatment can have no possible effect upon the parasitic disease, whatever good or bad effect it may have upon the patient. Of the ointments, soaps, baths, and other topical remedies employed at the same time, some may do good by accident, and in course of time the disease may





CHROMOPHYTOSIS.





be possibly cured without the physician becoming aware of the fact that he has utterly misconceived its nature.

Generally, however, a failure to recognize the parasitic origin of the disease results in its partial cure, by means of some local remedy of an irritant or parasiticide nature, assisted perhaps by the advent of summer and free perspiration. But with the discontinuance of the local remedy, or the return of colder weather, the eruption begins to spread rapidly from the uncured patches, until the original extent of surface is covered, and so the disease may persist for many years, even on those who bathe frequently and are not unmindful of the hygienic requirements of the skin.

The chief clinical features of chromophytosis, which are certainly distinctive enough to make correct diagnosis easy, are the following:

The eruption occurs upon the trunk and upper extremities. It is usually observed upon the chest and scapular region. In well-developed cases, a few outlying spots may be noted upon the uncovered portion of the neck, upon the forearms, and upon the groins, but such localization is quite rare.

The eruption is macular in character or raised so slightly as to be only appreciated by a delicate touch. When recently developed, there are numerous small round chocolate-colored spots, which later coalesce, and form large, irregular patches of a dull yellowish hue. The infraclavicular spaces, a favorite seat of the eruption at its outset, are often found to be entirely free at a later period of its course. The eruption, though smooth in appearance and simulating a pigmentary disorder, is in reality a slightly scaly one. In cases where no recent bath has been taken, the finger-nail lightly drawn over the patch will leave a line of roughened epidermis.

It has been frequently asserted that chromophytosis is in some way related to pulmonary disease, and its presence upon the chest has even been regarded as an external evidence of weak lungs. It is true that in our clinics for chest diseases many instances of this eruption are brought to light. This results from three facts. Firstly, chromophytosis is a very common disease; secondly, the eruption is most likely to be discovered in a clinic where the chest is partially bared during an examination of the patient; thirdly, the vegetable organism causing the eruption thrives best, like other fungi, upon a moist surface, and the sufferer from advanced pulmonary disease, with his poor circulation and clammy skin, offers the best possible soil for the implantation of any vegetable parasite.

It has also been asserted that chromophytosis is especially common among syphilitic patients, but no proof of the assertion has been offered. If it be so, the fact can only be explained by assuming the same sequence of ill health, poor circulation, and consequent moisture of the skin, or by the fact that the average syphilitic patient in dispensary service is not over particular about the frequency and thoroughness of his baths.

That the frequent occurrence of the disease in any class of patients depends solely upon the condition of the skin, and not upon the state of the patient's health, is shown by its not infrequent occurrence among athletes

whose perspiring skins naturally invite the eruption. In short, a moist surface, such as is frequently found upon the sternal and interscapular regions, favors the development of the fungus, but why the disease should confine itself with strictness to the trunk and upper extremities, rarely if ever appearing upon other surfaces moistened by perspiration, is a question which is quite difficult to answer.

In the accompanying illustration it will be noted that there are no patches of disease upon the sternal and infra-clavicular region, where the eruption usually appears first and is most frequently seen. This is doubtless the result of excessive perspiration on the part of the patient. This has served to macerate the epidermis, and the parasitic fungus has been destroyed like a plant which has been too frequently watered.

Like other parasitic affections chromophytosis is contagious, but unlike its congeners, it is contagious only in a very moderate degree. A husband or wife will often have a well-developed eruption for a long time while the occupant of the same bed remains entirely free. Whether individual skins are especially susceptible to the implantation and spread of the parasitic element of this disease, apart from the question of moisture, is a question which may be answered in the affirmative with more plausibility than positiveness.

The treatment of chromophytosis is usually a simple matter when the parasitic nature of the eruption is recognized. All that is necessary is to remove the superficial layer of epidermic cells from the affected parts, and this may be accomplished by either mechanical or chemical agents. The simplest plan of treatment, and one which acts speedily in most cases, consists of green-soap friction and the application of a saturated solution of sodium hyposulphite. The soap-friction should be made in a daily hot bath, and the solution sponged over the affected skin morning and night. If the green soap be dissolved in an equal part of cologne-water and the hyposulphite lotion made with rose-water, the result is a cleanly, agreeable, and effective method of treatment, and one well suited to patients in private practice.

In patches of long standing, requiring a more vigorous treatment, or in cases where a cure in the shortest possible time is desirable, the green soap may be rubbed into the skin and allowed to remain. This quickly produces a superficial inflammation and peeling of the epidermis. Caution should be exercised in applying it to the tender skin upon the neck or about the nipples and axillæ, lest too much inflammatory action be the result. If precipitated sulphur and pumice-stone, ten per cent. of each, be added to the green soap, the efficacy of the application is considerably increased.

In the treatment of every case, and especially those of long standing, it is necessary to continue the local applications for some time after the disease is apparently cured. Otherwise some of the spores which have found their way into the hair-follicles will escape destruction, and in a few weeks after discontinuance of treatment will give rise to a new and rapidly-spreading eruption.



## REMOVAL OF A SMALL SOLID TUMOR FROM THE LIVER.

BY LOUIS McLANE TIFFANY, M.D.,

Professor of Surgery in the University of Maryland.

IN the *American Journal of the Medical Sciences* for June, 1888, attention was called to the fact that in certain cases of liver disease or injury an area of liver surface more or less extensive could be shut off by suture from the general peritoneal cavity while remaining exposed to the air, thus enabling the surgeon to operate for abscess, wound, etc., with but small risk of inducing septic peritonitis. Eighteen months ago it was my fortune to have recourse to this procedure when removing a small solid tumor of the liver. The history is as follows :

J. M. H., aged twenty-five, occupation farmer, was admitted to the University Hospital May 17, 1890, and was referred to me by Dr. Luther M. Hunley. He is married ; family history is negative ; he has always been healthy up to the commencement of the present illness, and never suffered from malarial fever, scarlet fever, or measles. He denies venereal troubles ; is temperate ; does not use tobacco. His first knowledge of his present illness dates from a colicky pain in the left side at the margin of the ribs ten years ago. At first the pain was but momentary, and appeared but once in two or three weeks. In July, 1886, he had an attack of what was denominated bilious fever, and since then has had pain continuously in his left side up to one year ago. When the pain in the side ceased, he suffered pain in the epigastric region. Sixteen months ago he noticed a swelling to the left of the middle line in front, just below the cartilages of the ribs, also at times slight pain in the lower part of the abdomen ; bowels constipated. In consequence of the pain he has suffered for the past four years he has been unable to do farm work. He is well developed, of medium height, tongue slightly coated, chest expands normally. There is a slight swelling in the epigastric region, to the left of the middle line, about two inches below the xiphoid cartilage. This lump is extremely tender on pressure. The patient thinks that this swelling has increased in size since he first noticed it. Deep inspiration causes the tumor to descend two inches. On expiration, it resumes its former position. The tumor is hard and resisting, dull on percussion, and appears to be about one and a half inches in diameter. Area of splenic dulness not increased ; kidneys act freely ; examination of urine negative. Pain is caused at the seat of the tumor by very deep inspiration.

The patient was prepared for operation in the usual way ; and two days after admission to the hospital he was operated upon as follows : An incision five inches long was made over the tumor through the left rectus muscle in the direction of its fibres. The wound edges were separated, the peritoneum was exposed, and all hemorrhage arrested. Bleeding was free. The apex of the tumor was adherent to the parietal peritoneum. The abdominal cavity was opened and the liver examined by touch. The tumor was found to be in the left lobe of the liver, about two inches from the lower free border. A finger passed beneath the liver found that the tumor did not extend through the viscus. A hypodermic needle passed into the tumor gave exit to

no fluid. The peritoneum was stitched to the liver around the circumference of the growth, which was then excised with curved scissors and the Paquelin cautery applied. The cavity left in the liver substance was an inch deep by one and a half inches across. The wound was packed with iodoform gauze. Ether was the anæsthetic used, and a good deal of nausea followed. There was much bloody oozing through the dressing for twenty-four hours. Urine had to be drawn by a catheter for three days.

With the exception of extremely constipated bowels, the patient's recovery was uneventful. In three weeks the patient returned home well and without pain. The photograph was taken three weeks after operation, the wound being superficial but



not healed. Within the past month (eighteen months since operation) I have heard from the patient as follows: He is in excellent health, suffers no pain, and attends to the necessary work on the farm of which he is the owner. Examination of the tumor which we removed showed that it was composed of liver tissue in which there was much exudation, while scattered through the growth were many fine grains of sand, —no doubt, minute calculi.

It will be found, probably, as clinical records accumulate, that the methods of operating on the liver more and more conform to methods applicable throughout the body, and as a necessary result the extreme hesitancy which now characterizes the undertaking of an hepatic operation by the surgeon will pass

away, and as a sequence more favorable results may be expected.

A glance at traumatism of the liver is not uninteresting.

In the "Medical and Surgical History of the War," second surgical volume, p. 130, are recorded twenty-six recoveries from punctured or incised wounds of the liver, gathered from various authors. Of these cases, in three, portions of the liver were cut off at the time of the injury; in two instances, portions of the liver were torn away; in three instances, portions of liver were tied and divided distal to the ligature; in one case a portion of liver is recorded as protruding, and "came away" on the fifth day; while as showing what might occur while the world was still wrapped in septic darkness, Theden, in the year of grace 1782, records a case of self-inflicted wound of abdomen, followed by escape of small intestines, removal of piece of diaphragm and liver one-half inch by three inches, and complete division of ileum. As the man was not expected to live, the protruding portions were returned pell-mell, and the wound in the abdominal wall was sutured; escape of fecal matter for four weeks took place; the patient recovered and lived seven years.



Sufficient has been learned by experience, in gunshot and other surgical wounds of the liver, to justify the opinion that hemorrhage is not to be greatly feared. Hemorrhage stops spontaneously, without doubt, in many cases, even in grave wounds perhaps, either punctured or gunshot. Pressure direct or with gauze suffices in the great majority of cases to bring about cessation of bleeding. In hemorrhages from deeper and larger vessels, a thread passed through the liver substance and then tied more or less tightly around the bleeding point arrests blood pretty thoroughly. In wounds resulting from resection of liver substance, if hemorrhage is not arrested spontaneously, sutures, Paquelin cautery, or the tampon leave little to be desired. Bleeding from the very large vessels of the liver, or even the inferior cava, will of course not be arrested by the method stated, but, so far, such accidents are not recorded as needing treatment. It is presumable that death occurs before surgical interference could be obtained. Ligature of individual vessels does not seem to be possible in this respect, the liver substance behaving in the same manner as kidney substance.

In Langenbuch's well-known case of resection, the pedicle was tied in sections, hemorrhage following the same evening, which necessitated re-opening the abdomen. Hochenegg<sup>1</sup> records a method of pressure by gauze which is worthy of note, and seems of general utility,—a wedge of liver substance had been excised.

"The severe hemorrhage ensuing after the excision of the wedge-shaped portion should have been stopped by the sutures, but they did not succeed in doing so, for all the stitches made in the parenchyma of the liver tore out again.

"The wound, therefore, had to be cared for in the following manner: The angular wound caused by the excision of the wedge was clapped together and covered with iodoform gauze, which was fixed in place by knotted sutures, and then the parietal peritoneum was attached to the visceral peritoneum by means of fine catgut sutures. The bleeding ceased entirely. The further progress of the case has been entirely uneventful up to the present time; the patient has continued free from fever and is to-day (first day after operation) doing well. The speaker will not fail to report the final result."

The arrest of bleeding after removal of a solid tumor presents rather a different view of the question; hence the importance of the following, which I quote at length.<sup>2</sup>

"Male, aged fifty, came to hospital to be treated for a hard tumor in the abdomen and great consequent debility. Diagnosis, carcinoma of the peritoneum. On account of the great suffering of the patient, laparotomy was performed at his request. A large tumor was found extending from the parietal peritoneum, but the point of its origin could not be accurately ascertained. Moreover, a yellowish lump the size of a pea was found adhering to the margin of the right lobe of the liver near the incisura

<sup>1</sup> Wiener Medicinische Blätter, 1889, No. 25, p. 391.

<sup>2</sup> Prof. Bruns, reported by Garré, in Beiträge zur Klin. Chir., Tübingen, 1888-89, iv. 181 et seq. (in extenso). (Case on page 188.)

hepatitis. A piece of liver the size of a hazel-nut, attached to the lump, was excised with the knife for microscopic examination, and the thermo-cautery was applied to the wound.

"The examination revealed the little tumor to be a metastatic carcinoma of the liver. The extirpation of the tumor was therefore desisted from, and the wound closed. Healing of the abdominal wound occurred without reaction."

These cases seem to indicate that hemorrhage after excision of the liver substance may be definitely arrested by ligature, cautery, or pressure.

The influence which may be induced by bile when poured into the peritoneal cavity is not yet to be stated definitely; the serous membrane is unquestionably more tolerant of its presence than has been supposed; but any discussion of the question is outside the limits of this brief paper.

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## THE VOICE.

BY J. SOLIS COHEN, M.D.,

Honorary Professor of Laryngology, Jefferson Medical College, Philadelphia.

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IMPERFECTIONS and impairments of the voice attend many diseases of the respiratory passages. This impairment, as will be seen, may be alike in many different diseases, and may be entirely unlike in different examples of the same disease. A thorough appreciation of the similarity of imperfections of the voice, as aiding the differential diagnosis, is best secured by an apprehension of the physical conditions presiding over the conditions of the voice. If then we study the mechanism of the human organism concerned in the production of vocal sound, we will gain considerable insight into the nature of the normal voice.

But what is sound? Sound is something that we hear. The congenitally deaf person has no conception of the nature of sound. If he were standing by the Falls of Niagara there would be for him no sound; for the sensation of sound is due to certain motions of the molecules of the extreme filaments of the nerves of hearing. These vibrate in unison with an exterior sonorous body. The motions of the sounding body are transmitted in pulses or waves through the air, or whatever other medium it may be, into our ears, and thence along the nerve of hearing into the brain, by which it is interpreted, and upon which it makes a special impression which we call sound. Now, whether this motion is communicated from without, as in ordinary sounds to which we are daily accustomed, or whether it exists primarily in the filaments of the nerves of hearing, the result in either case is sound. A blow on the side of the head often shakes the auditory filaments and produces sound. A current of electricity passing through the



organ of hearing likewise produces sound. There is even reason for believing that the singing in the ears, occasionally heard by nearly every one, and the noises of wind and water, sometimes of music, to which certain invalids are subject, are all of them the result of physical motion or tremor as set up in the auditory apparatus.

The peculiar form of motion which gives rise to what is known as sound is a motion forward and backward,—like the motion of the pendulum, or of the balance-wheel of a watch. The effect upon the air is to produce alternate condensation and rarefaction in the spherical waves or undulations radiating from the centre of disturbance. When this motion is not excessively rapid,—that is to say, when it recurs with less frequency than sixteen repetitions to the second of time,—it is too sluggish to rouse the organ of hearing, and produces merely some of the ordinary manifestations of mechanic force,—as we see, for instance, in many of the industrial arts. But when it is more frequent than sixteen repetitions to the second of time, there is a special manifestation of sound, and the pitch, intonation, or acuteness of the sound rises in proportion to the increased frequency of the motion. Listen to the musical whiz of the steam saw when sawing lumber, for example. This rise in pitch increases until, at the rate of thirty thousand or forty thousand repetitions per second, the effect becomes so shrill and sharp as gradually to transcend the human powers of hearing. Chemical action, light, heat, electricity, mechanic force are all of them manifestations of one universal force,—motion. As these manifestations are to a certain extent convertible one into another, we are led to the comprehension of the grand fundamental principle of science known as *the correlation of forces*. The more rapid the vibrations the higher in pitch become the sounds. This pitch rises until a rapidity of motion is acquired to which the ear fails any longer to respond, the limit varying in different individuals according to the sensitiveness in their hearing apparatus. When these vibrations are equally timed,—isochronous, periodic, or rhythmic,—the effect of the sound is pleasant and is termed *musical*. When they are irregular, the sounds that are produced are merely noisy. Music is audible at a greater distance than noise. This greater reach of music is utilized in the street cries of large cities,—notably the cries of rag-men, vendors of fish, fruit, hot corn, etc. Philadelphians will recall the great reach of the peculiar musical cry of the “hominy man.”

Music and noise are convertible also. Sounds which individually are musical become discordantly transmuted into noise when a number of them are produced simultaneously.

Sounds, vocal and otherwise, differ in intensity, in pitch, and in quality. Intensity means loudness, and is independent of pitch or of quality. Pitch is the degree of acuteness or gravity, and is independent of intensity or of quality.

Quality (or *timbre*) is that peculiarity by which the sound of one instrument or of the voice is distinguished from other instruments or other voices.

It is independent of intensity and of pitch. Mere stretching of the vocal bands will only increase the pitch to a certain extent. For the further extension of the register another action of the muscles is requisite, which progressively shortens the free surfaces of the cords, at the same time that they are rendered tense. If we examine the strings yielding the higher tones of the piano we find that they are shorter and shorter as these tones rise in the scale; and we know that if the length of the string on a violin is shortened by placing a finger on it, stopping it, its tone rises in pitch, and that the shorter the string the acuter is the sound. So, too, with the vocal bands.

Quality is that characteristic by which, for example, we distinguish the voices of our friends, who become thus recognizable in the dark. The physical cause of quality is difficult of comprehension. The quality of a tone depends physically upon the shape or composite conformation of the series of undulatory waves of sound which collectively produce it. In any sound, as a note on the piano or violin, there is a fundamental or ground tone which determines the pitch,—that tone which strikes our attention prominently. If we listen carefully, however, we find other feeble sounds commingling with it. These are higher in pitch, and they bear certain relations of harmony to the ground tone. If we listen to the striking of a bell, for instance, as in a town clock, we shall be able to detect some of these sounds, especially as the ground tone of the bell is fading away. An idea of what is meant can be obtained by blowing over a bottle. The overtones are weak, and the pitch appears graver than it really is. Harmony, then, results from concordant commixture of a fundamental or ground tone with its overtones and with other combinations. Then there are summation tones and other tones which cannot be detailed here, but which are fairly well presented in my little manual on the “Throat and Voice,” Philadelphia, 1874, from which much of this lecture is reproduced. Considering these physical influences as they apply to voice and singing, it follows, therefore, that any influence which interferes with the precision with which both vocal bands shall be adjusted, in equal strain and tension, will disturb the harmony of the upper tones of either band, or both of them, thus impairing the quality of the voice, and producing discordance.

The capabilities of a well-cultivated voice are almost incredible. Madame Seiler, in her manual of “The Voice in Singing,” relates an incident in the career of Farinelli, who on one occasion competed with a trumpeter who accompanied him in an aria. “After both had several times dwelt on notes in which each tried to excel the other in power of endurance, they prolonged a note with a double trill in thirds, which they continued until both seemed to be exhausted. At last the trumpeter gave up, entirely out of breath, while Farinelli, without taking breath, prolonged the note with renewed volume of sound, trilling, and ending finally with the most difficult of roulades.”

Reach is the penetrant power of sound over distance and obstacles, such as other sounds. It is due to the purity of the tone, which in its turn is



dependent on the accuracy with which it is produced. At the great Peace Jubilee at Boston, in 1869, the pure tones of the voice of Madame Parepa Rosa were distinguishable above a chorus of over twelve thousand voices and an orchestra of more than one thousand instruments; and that, with audiences of nearly forty thousand people.

The quality of the voice is also largely dependent upon the resonance of the cavities of the throat, mouth, and nose, through which the expiratory current of air passes out, and the waves of sound likewise, after the vocal bands have been set in vibration. Therefore diseased conditions impairing the shape, flexibility, and succulence of these structures prevent consonance of vibration and contribute to produce discordance or hoarseness.

The best voice utilized in ordinary speaking in the United States rarely extends beyond the musical interval of one-fourth (C-F), while the ordinary singing voice may reach two octaves.

For the full development of the voice exercise is requisite. The control of the organs is soon lost if practice is long intermitted, just as in the case of the fingers of the skilled instrumental performer. The actor who treads the boards nightly has a great advantage over the clergyman, for instance, who appears only once a week in his pulpit.

Improper methods of using the voice lead to certain affections of the throat,—the chief one of which is generally known as clergyman's sore throat. It occurs in all cases of persons who strain or misuse the voice. It consists in congestion of the mucous membrane or muscles of the throat, with enlargement of many of the glands which secrete the lubricating fluid that keeps the surface of the throat moist and pliable.

A great defect in vocal utterance is due to pitching the voice in too high a key,—that is to say, in too high a portion of the vocal register. The so-called chest portion of the register is the proper one to use, especially in men. But care must be taken not to use the very lowest portion of the register, as that would develop a defect in the opposite direction.

Speaking too loud is another common defect of public speakers. The natural tone, such as is employed in thanking a friend for an ordinary courtesy, is the best one speaking from the platform or reading-desk. It is related of one famous actor that when going on the stage he would ask some by-stander the time of day, and that on learning it he would reply, "Thank you," in an ordinary tone, which he would preserve as his key-note in commencing his address.

Speaking too rapidly is another defect in the use of the voice, which mars its efficacy. Very few public speakers are deliberate enough in utterance. Rapid speech interferes with the elementary principles of acoustics. Sound-waves require a certain length of time to travel from one end of a room to the other. Then they undergo reflection and deflection from the walls of the room and verge towards the centre of the apartment, where they become irregularly commingled with the direct waves, thus creating confusion of sound, which does not subside on the instant their utterance

ceases, but continues an appreciable period afterwards. Due allowance must be made in all cases for the resonance of the room, and time be given for its subsidence.

A bad habit with many speakers is in giving too much time to the consonants of speech, and too little to the vowels. The chief vocal sounds are those of the vowels. Among the slaves of the cotton-fields it used to be common for parents to give their children such names as Tom, Bob, Pete, etc., so that they could hear their mammas calling them at a great distance.

It is important that proper care should be taken of the voice. Rest should be taken at intervals, after vocal effort. The voice should not be exercised after a hearty meal, for a full stomach interferes with the full play of the diaphragm, and consequently with normal abdominal respiration.

If the throat becomes dry during the use of the voice it may be moistened by a sip of water, which should, however, be held in the mouth for a minute or two before swallowing. Copious draughts of water have a tendency, in a measure, to paralyze the voice.

The voice should not be used for public purposes during ever so mild an attack of sore throat, or during any indisposition that makes its use require unusual effort.

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## *ACUTE ENLARGEMENT OF THE THYROID GLAND; ANGIO-NEUROTIC ŒDEMA.*

BY WILLIAM A. EDWARDS, M.D.,

San Diego, California; Fellow of the College of Physicians of Philadelphia, American Pediatric and Pathological Societies; formerly Instructor in Clinical Medicine in the University of Pennsylvania; Physician to St. Joseph's Hospital; Associate Pathologist to the Philadelphia Hospital, etc.

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KATE H., a large-framed Irish servant-girl, early in September, 1888, had an attack of nephritic dropsy with albuminous urine, from which she apparently entirely recovered, as the dropsy disappeared, and the urine was free from albumin. The treatment at this time had consisted of Rochelle salt, Basham's mixture, and compound jalap powder. In October of the same year she consulted Dr. Walter F. Atlee,<sup>1</sup> of Philadelphia, on account of a great swelling in front of her throat, which moved up and down to some extent in swallowing, as if connected with the thyroid gland. Compound iodine ointment was applied and pil. ferri iod. given internally. By November 16 the enlargement was much greater, and by December 5 the swelling had extended all over the front of the neck, even to the shoulder-blades. On the 8th there was much expectoration of tough phlegm tinged with blood, great difficulty in swallowing, and pronounced apnoea. On the 9th she became moribund and died on the 11th. The enlargement of the thyroid was great and rapid, so that the neighboring parts did not have time to accommodate themselves to its increased size; consequently the pressure exercised on the larynx, the upper part of the

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<sup>1</sup> Through whose courtesy I am enabled to report the case.



trachea, the carotid arteries, and the internal jugular veins produced a fatal result. Her voice was hoarse, feeble, and finally absent entirely; dysphagia existed to a marked degree, and the respiration also was so much interfered with that she perished by slow suffocation and starvation. The swelling was painful only to palpation, and at such times the pain extended to the shoulder and the back of the neck. The arteries of the neck beat violently, and the veins were greatly swollen; there was much fever, sleeplessness, and restlessness. The expectoration was bloody and muco-purulent, as if the trachea had been opened.

This case is one of extreme rarity; indeed the paucity of like cases in medical literature renders it difficult to make any deductions upon its relative frequency of occurrence. A somewhat extended search, as careful as the means at my disposal would permit, has failed to show its counterpart. Of course we recognize the fact that in cases of chronic parenchymatous<sup>1</sup> nephritis, of which this was an example, effusions are the rule rather than the exception, but it is usually the serous cavities that are the selected sites and not the parenchyma of organs. We are unable to account for the unusual condition present in our case, the more so from the fact that the dropsy was so local and at the time of its fatal occurrence was the only effusion present. As far as could be ascertained, all the serous cavities were free from serum. It was this sudden outpouring in the vital structures at the base of the neck which caused such a rapidly fatal termination.

This acute swelling of the thyroid gland in Bright's disease does not seem to have attracted much attention from observers. Barlow<sup>1</sup> has reported an illustration of acute enlargement of the gland in a child just recovering from an attack of erythema nodosum, in whom slight and gradually-increasing enlargement of the thyroid gland occurred, accompanied by pain, dysphagia, and fever, which yielded at the end of two weeks to leeching. Notwithstanding the association in this case with erythema nodosum, which, according to some, would place the case in a rheumatic light, Barlow is inclined to agree with Lucke, that it had an idiopathic origin; a slight nasal catarrh and exposure to cold when in an anæmic condition might have been factors in its production. In the discussion of Barlow's paper, Berry referred to several fatal cases of acute enlargement of the thyroid, which usually occurred at or about the period of puberty. Access to the original paper has been denied me, and I am not aware whether the pathology of these cases of Berry's was considered or not. This case in many respects resembles those somewhat odd cases described as acute local, acute circumscribed, or angio-neurotic œdema, a disease, as Osler<sup>2</sup> remarks, characterized by the sudden onset in various regions of œdematous swellings, more or less limited in extent, and of transient duration. This writer briefly states the following characteristics in the cases that he has studied: the occurrence of local swelling in various parts of the body,—face, hands, arms, legs, genitals, buttocks, and throat. In one

<sup>1</sup> Annual Universal Medical Science, 1889.

<sup>2</sup> Allgemeine Pathologie, Bd. i. p. 500; Osler, *ibid.*

instance, possibly in two, death resulted from a sudden œdema glottidis. One of the cases in this report died, aged sixty, of Bright's disease, who had had from the age of twenty many very serious attacks of local œdematous swellings.

We are inclined to regard our case as a vaso-motor neurosis in association with Bright's disease, a grouping that is not at all unusual, and under whose influence the permeability of the vessels is so altered that leaking occurs. Unfortunately, however, at present our knowledge of the process of transudation is not at all complete, and, as these forms of œdematous swellings come under this heading, we can but agree with Cohnheim<sup>1</sup> "that we have to do here with clinical facts and observations which urgently call for scientific investigation, and that we possess at present but extremely scanty material for an adequate explanation of neurotic œdema."

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### ELASTIC SKIN.

BY A. H. OHMANN-DUMESNIL, M.D.,

Professor of Dermatology and Syphilology in the St. Louis College of Physicians and Surgeons.

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ELASTIC skin, as it is popularly called, is a condition which cannot be regarded as rare, although it is by no means a common one. It is one, however, which is so interesting that it is a matter for surprise that it has received so little consideration at the hands of those interested in cutaneous troubles. The standard works on dermatology either do not allude to it at all, or give it such scant mention that but little can be gleaned from them in the nature of a good clinical or pathological description. The purpose of this short paper is merely to call attention to the fact that this condition is one which actually exists and which differs essentially from all the other forms of hypertrophic processes which attack the skin in part or in whole. Having had occasion to examine a few cases, although unable to procure specimens for microscopic examination, the condition present could be pretty accurately surmised, borne out as it was by the clinical characteristics which were present.

The condition is one which is congenital, and, as a rule, exists over the entire surface of the body. It consists, essentially, in the ability to draw the skin in long folds, and this to a degree which is very much out of proportion to the normal. In those portions of the integument where it is thinnest the skin can be drawn to a much greater extent than where it is thick, so that a simple consideration of the sites where the

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<sup>1</sup> American Journal of the Medical Sciences.



integument is most thin will readily suggest the localities where it is most marked.

I have had opportunities to observe but three cases of this condition in which it presented characteristics which would be regarded as abnormal. All three were males,—two adults, and a boy, who, having seen the case of

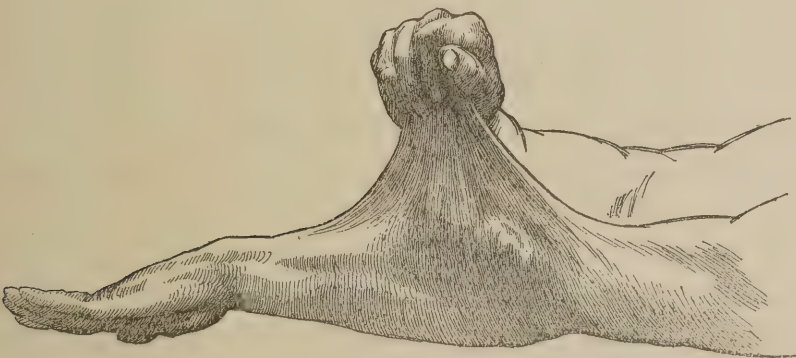
FIG. 1.



Skin in repose.

an "elastic skin" man at a museum, discovered the same peculiarity in himself. I had the arm of one of the men photographed in a state of repose and with the skin drawn, and the accompanying engravings show very well the amount of tension which the skin would bear. It will be ob-

FIG. 2.



Skin drawn up by traction.

served that the traction exerted in the instance figured is not very great, and a fact to which all agree in testifying is that drawing the skin does not produce any pain.

This is not the only interesting feature connected with this condition. The most interesting is that which has given it its name. There is an amount of elasticity and resiliency present which is of so marked a character as to draw immediate attention to it. The skin while easily drawn into long folds will return to its normal condition as soon as the tension is removed. This retraction seems to be a permanent quality, for in one case which I saw the man had been extending his skin into folds a great many times daily and without any apparent impairment of its elasticity. The same peculiarity of elasticity existed in the others.

It is this quality which serves to differentiate this condition from dermatocele,—the so-called cutis pendula. In this latter condition the skin becomes thickened, rugous, warty, and hangs in folds. In elastic skin it is,

to all intents and purposes, normal so far as external inspection is concerned, with one exception: to the touch it has somewhat of a doughy feel and seems velvety when the fingers are passed over it. These characteristics are explainable when we consider the conditions present in the tissues underlying the skin. But in other respects no difference can be found. The skin is as smooth and as thin as the normal, and no subjective sensations are complained of by the individual so affected.

As to the true pathology of this deformity I am unable to speak authoritatively. Judging from the symptoms a pretty accurate surmise may be made, which will be found to be in consonance with the facts presented. In the first place, the entire integument is raised in the folds, for the arterial circulation can be plainly discerned when the fold is viewed by the aid of transmitted light. The change, then, must lie in the subcutaneous tissues. Now, we know that these consist of connective tissue and fat, and, furthermore, that the connective tissue is of a mixed form. Basing ourselves upon these premises, the only rational conclusion which can be drawn is that it is this connective tissue which has undergone change or which underwent a modification prior to birth. From the picture presented in the condition we can draw only one conclusion, so far as regards the pathology. There must be a hypertrophy in the length of the white fibrous connective tissue and a hypertrophy in the length and quantity of the yellow elastic tissue. The first must exist or it would be impossible to extend the skin into such long folds; the second must be present or the integument would not only not return to its normal position, but it would, in time, become pendulous.

It is no doubt on account of this hypertrophy of the subcutaneous connective tissue that the skin has such a doughy feel, and it is perhaps due to the constant manipulation that the velvety feel is elicited on account of the larger number of lanugo hairs which spring up by reason of the stimulation afforded by constant manipulation.

Such is a brief notice of a condition which is unusual and of sufficient interest to merit more than the few passing comments it has hitherto received at the hands of the profession. A microscopic study would no doubt add to the value of our positive knowledge in respect to its pathology, and it is to be hoped that an opportunity will soon present itself that will lead to the filling up of this gap.



*THE EYE-SYMPTOMS OF CEREBRO-SPINAL DISEASE.*

BY EDWARD JACKSON, M.D.,

Professor of Diseases of the Eye in the Philadelphia Polyclinic, Surgeon to Wills Eye Hospital.

## PART I.—DECLARATIVE SYMPTOMS.

THE eye-symptoms of cerebral and spinal diseases may very well be divided into those which indicate the presence and perhaps the nature of the disease and those which are of probable value in localizing the disease. We cannot divide them strictly into these two classes, but still to think of them in this way will help to bring out their significance. Certain symptoms are important as showing that disease is present, often gross or organic disease. Other symptoms, while showing disease to be present, are principally of value in that they indicate where it is located. In this paper I shall consider those symptoms which are chiefly of value in that they show that actual brain lesions or spinal lesions are present, without giving any definite indication as to where the lesion is located.

We might consider in this connection a great many eye-symptoms; for instance, in anæmia there are certain brain conditions and certain eye-symptoms, and ocular evidence of anæmia is of value in interpreting the cerebral symptoms.

Exaggerated importance has been attached to eye-symptoms,—at least to some of them, as the *arcus senilis*, of which the statement that it indicates fatty degeneration of other tissues has been made and widely copied, while there is little evidence to show that it is at all significant of the tendency to fatty degeneration in other parts of the organism. It may occur in very young people and it is frequently present at from thirty to fifty years of age. Men and women often live half their lives after its appearance, so it is really of little symptomatic importance.

A symptom which might be regarded as more significant is embolism of the central artery of the retina, and yet I cannot recall any case of embolism of this artery that has been followed by embolism of any other vital organ, and I have seen no case where hemorrhage from this artery was followed by cerebral hemorrhage except in Bright's disease. In this latter class of cases as a concomitant symptom intra-ocular hemorrhage has great value.

The ocular lesions due to constitutional disease or diathesis may be of the greatest value. We had a few months ago in the Polyclinic Hospital a case of ocular paralysis, syphilitic in origin, which improved rapidly and recovered entirely under large doses of iodide of potassium. The same patient afterwards suffered from paraplegia and was inefficiently treated for many weeks before we heard of him. I feel sure it would have been of

the greatest value for the physician who attended him to have known of the existence and significance of the preceding eye-symptoms.

Turning to cerebral diseases that are manifested especially by eye-symptoms we will first consider *exophthalmic goitre*, or Graves's disease, which, it seems to me, should be regarded as a disease of the central nervous system. The exophthalmos is the most striking symptom and often one of the first to attract attention. The apparent exophthalmos is not wholly a forward displacement of the eyeball. In most of the cases I have seen the displacement of the eyeball was very slight, and there are some cases in which there is no displacement at all; but the appearance of exophthalmos is due to the great retraction of the lids, through the spasm of the fibres which assist in retraction of the eyelid under the influence of the sympathetic. A characteristic symptom is what is known as Graefe's symptom, the failure of the upper lid to follow the eye when it is turned down. The eye manifestation is largely of the nature of a spasmodic retraction of the lids, and the most rational explanation of the disease that has been put forward is that it is essentially a neurosis. The cardiac symptoms and the bronchocele, though not constant, go to show that the symptoms are produced by some central cause.

Another eye-symptom which indicates a functional disease of the brain is that known as *ophthalmic migraine*. It consists in a peculiar form of blindness, not complete insensitiveness of the retina to light, and usually not entire unconsciousness of objects presented to the sight, but usually such objects are seen as through a haze. Some patients complain of distinct flashes of light, and "the dazzles" is a popular name for this symptom. It has been described as resembling a jet of water going over certain portions of the visual field, sometimes filling the whole field even, and then passing away to one side. These symptoms are often at first quite alarming to the patient, but he soon grows to recognize their significance and does not have much inconvenience from them.

In the majority of cases this interference with vision is simply the aura or the commencement of an attack of migraine. The patient may have been feeling very well, or not quite as well as usual previous to the attack; then occurs this interference with vision, which lasts usually from one to twenty minutes; and as this appearance in the field of vision passes away, as the vision becomes normal again, the headache begins and rapidly attains great severity. There are other cases in which the ophthalmic symptom appears but is not followed by headache, but these are rare. It is quite possible that the ophthalmologist sees more of these cases than other physicians on account of the eye-symptom, but it is certainly quite common in cases of migraine, and serves to distinguish these headaches from other headaches in the same individual, and give them a special character. Many patients can distinguish between the common and sick headache by this one symptom, and this will enable the physician to make that essential distinction. Ophthalmic migraine is not especially connected with headaches



arising from eye-strain, but it is to be remembered that the majority of all headaches are essentially due to that cause.

As one of the ocular symptoms significant of brain lesions I shall speak especially of *albuminuric retinitis*. There is a well-defined group of phenomena which are known under the name of Bright's disease. Their study was first approached by the symptom of albuminuria and the local lesions of the kidney; these first drew attention to them, and they have come to be known as Bright's disease of the kidney, or chronic interstitial nephritis. Albuminuric retinitis occurs as one of these associated lesions. But the central pathology of the affection has to do with either the circulatory or the nervous system, and in the present state of our knowledge it seems probable that the central nervous system is the part primarily affected. The majority of cases of Bright's disease, I think, are brought about by certain conditions of nerve-strain. It is common among the members of the medical profession, who are not especially exposed to conditions likely to produce kidney disease or an excessive formation of connective tissue in the walls of the vessels, but who are subject to certain forms of nervous strain. Then the principal stages of the disease seem clearly connected with nervous actions. For instance, the passage from the stage in which there is high arterial tension and sufficient elimination to the stage where the tension drops and elimination is defective is intimately connected with the vasomotor changes. Again, the most serious symptoms are often manifested by the nervous system. They may be secondary to vascular changes, but the brain-symptoms of Bright's disease are the most striking and serious in a large proportion of cases, so that we may fairly give it place in an article on the symptomatology of the cerebro-spinal system.

Albuminuric retinitis is often not a retinitis, not an inflammation of the retina in the sense of the term inflammation as generally used, but rather a degeneration. It is difficult or impossible to draw a line between chronic inflammations and chronic degeneration. As an instance of confusion in this respect take retinitis pigmentosa, which is a primary degeneration, if there is one, and albuminuric retinitis in some respects resembles it.

In albuminuric retinitis, there are patches of fatty degeneration of the tissue of the retina or of exudation into the retina, and at times hemorrhages. The appearances of the retina are very characteristic. They are so much so that upon them it is perhaps safer to rest a diagnosis than on any other single symptom that can be named.

Recently a patient was sent to me for severe headache, with a history of a series of convulsions and other nerve phenomena, running back over some months; and with the express declaration, on the part of the practitioner under whose care she was, that there was no kidney trouble. The examination showed normal urine, and in watching the symptoms he came to the conclusion that Bright's disease could be excluded. The symptoms pointed very strongly in the direction of a brain tumor or meningitis. But on examining the eye-ground I found the disks hazy and slightly swollen,

and there were two hemorrhages, some of the vessels showed streaks of degeneration in their coats, and in the region of the macula there were the white dots of albuminuric retinitis and some slight swelling of the neighboring retina. I wrote to her physician that probably the trouble was Bright's disease, and that I would be much surprised if the patient was excreting the normal amount of urea in the twenty-four hours. A later examination showed that the urine was loaded with albumin and casts.

I think, as already indicated, that we may regard this symptom as the most characteristic single symptom of the condition known as Bright's disease, more characteristic than the albumin in the urine and of equal value with the finding of casts. It is not an early symptom, it usually arises late in the disease, but in spite of that, it is sometimes the first symptom recognized. Then when the investigation is made in the light of our knowledge of the albuminuric retinitis, we find the history shows evidence of some trouble running back for months or years, which has never been referred to the proper cause until the retinal lesion was discovered.

It is a symptom of great importance for prognosis. Retinal lesions do not usually occur until the arterial tension is beginning to fall or has already fallen, and the excretion of urea is imperfect and difficult to keep up to a sufficient amount. At this stage, too, the vessels throughout the body have suffered serious degeneration, and there is liability of most serious cerebral symptoms. Even in the matter of the continuance of life the prognosis is very grave. The strong probability is that the patient will not live over one or two years after the appearance of eye-symptoms. I can recall seeing only one case that lived over two years. He lived five years, but over half that time was little better than a general paralytic, mentally he was quite broken down within two years after I first saw the retinal lesion, and after that he continued to exist on a very low plane of mental and physical life. And in the many cases reported very few have lived more than one to two years.

There are a number of poisons which cause special lesions in the eye, to a few of which reference may be made. *Lead-poisoning* is liable to cause albuminuric retinitis, which is like any other albuminuric retinitis in its significance and appearance; and it is also liable to cause atrophy of the optic nerve and paralysis of the accommodation. I think special interference with accommodation in an obscure case of chronic ill health should suggest the possibility of lead-poisoning. No other cause of cachexia is especially likely to affect the power of accommodation. *Tobacco* and *carbon bisulphide* cause severe cerebral symptoms and special eye lesions, including central scotoma and retrobulbar optic neuritis.

*Malarial poisoning*, particularly malarial neuralgia, may be attended with paræsthesia of the cornea. There also is a peculiar form of keratitis clearly due to malarial poisoning, which is perhaps characteristic. It occurs in connection with malarial neuralgia or with remittent or intermittent fevers. The peculiarity of it is that an actual ulcer is usually the first manifestation



of the keratitis. The cornea presents the ulcer without any general haziness; the ulcer is characteristic in form, it is linear, composed of comparatively straight parts, joining each other or branching at various angles. The ordinary forms of corneal ulcer start at some one point and then spread from it, but this ulcer seems to start at a number of small points arranged in the direction of lines, and these run together to form the irregular figure it assumes. A serpiginous ulcer may present much the same irregularity, but it is rounded, not angular, and the tissue is involved around the ulcer. In the malarial ulcer there is no surrounding infiltration until later.

The most important of the symptoms which indicate the presence or nature of cerebral disease is *optic neuritis*, *papillitis*, or *choked disk*. In the earlier years of ophthalmoscopic diagnosis these cases were classified as two distinct diseases. The neuritis was supposed to be due to an extension of inflammation along the nerve or sheath; while a choked disk was regarded as arising, in some unknown way, primarily at the entrance of the optic nerve into the eye, and not as due to a direct extension. This view was based on microscopic examinations of the nerve, which did not show marked changes of the nerve-trunk, while there were marked changes where the nerve entered the eye. The view now generally held is that there is but one affection,—that it is optic neuritis in all cases. There can be no doubt that there is special liability to inflammation just where the optic nerve enters the eye, and at that point the inflammation is usually more severe than it is in the nerve-trunk; but more careful examinations have shown that where there is severe inflammation at the papilla and the gross appearances of the nerve-trunk are normal, there exists microscopic evidence of an inflammatory process in the connective tissue supporting the nerve-fibres or in the nerve-sheath.

That the gross appearances of disease are much more marked at the head of the nerve is certain, and various theories have been advanced to explain it. One of these was that it was due to transmission through the lymph-spaces of increased intracranial pressure. We had no good evidence that there was any real increase in intracranial pressure, but it was supposed there might be; then it was supposed this intracranial pressure would be transmitted between the two sheaths of the optic nerve. The dural sheath of the nerve is continuous with the periosteum of the optic foramen, so that it might be regarded as a continuance of the cerebral envelope, and supposed to be under the same hydrostatic conditions as the cranial space. And to support this view, instead of the normal shape of the nerve, with its narrowing as it enters the sclera, there is sometimes a great dilatation of the sheath at this point. But we have no affirmative evidence that this dilatation is due to any increase of intracranial pressure.

Another theory is that the choked disk is due to a nervous connection of the part, through the sympathetic system, with the meninges of the brain, and that any lesion of the brain or disease of the meninges is liable through this connection to set up inflammation here, just as inflammation was sup-

posed to be set up in a sound eye by reflexes from an injured one. But we now know that the "sympathetic" inflammation of the second eye is caused by direct extension from that of the exciting eye. On the whole, the special predilection of the nerve-entrance for such inflammation must be left for future explanation, as one of many facts we cannot account for. Certain poisons have a predilection for certain structures in the body, and we know no reason to account for the fact that atropine will cause a paralysis of the muscles of accommodation rather than of other muscles, or act on the respiratory centres in a manner different from its action on any other centre. Admitting our ignorance of immediate causes, the fact remains that here is a special liability to inflammation with great swelling, often much greater than the whole width of the nerve at the entrance, sometimes twice as great. The diameter of the nerve where it enters the eye is one and a half millimetres, and it may be swollen so as to protrude three millimetres into the vitreous chamber.

In diseases of the brain the presence of optic neuritis generally indicates some gross lesion. There are cases of neuritis connected with albuminuria, called albuminuric neuro-retinitis, and we may have neuritis occur alone, not due to cerebral lesions or to any discoverable constitutional cause, but these cases are few. Far more frequently do we meet neuritis from eye-strain, but there we have other evidence of eye-strain, and can usually make certain of eye-strain as the cause, or exclude it. When marked neuritis is not due to eye-strain cerebral disease may be looked for, particularly if the neuritis is bilateral.

Optic neuritis is a symptom which declares the presence of disease, and that it is attended with gross organic changes, but does not locate the disease. Brain tumor or meningitis involving the base of the brain causes neuritis in a large proportion of cases. In so far as it has localizing value it indicates a tumor involving either the cerebellum or the basal ganglia, or connected with some portion of the base of the skull or meninges; but neuritis does occur with meningitis or tumors of the convexity, although more rare in that connection; so that you cannot regard it as a localizing symptom. However, the simple fact that it declares with great certainty the presence of some gross lesion in the brain often furnishes the basis on which the whole diagnosis rests.

In meningitis pain may be the only other marked symptom. I have seen cases of tubercular meningitis in which protracted and constant excruciating headache was the only other symptom present. Optic neuritis, by proving there was some gross lesion present, showed that the headache was that of organic and not functional disease. In a considerable proportion of brain tumors, in tumors of the cerebellum, and certain portions of the right temporal lobe and anterior portion of the frontal lobe of the cerebrum, you have no localizing symptoms which indicate the presence of a tumor, and in these cases the diagnosis often lies at some stage between hysteria and brain tumor. Ocular symptoms will generally make the diagnosis, particularly that of optic neuritis. The certainty of the symp-



tom makes up for its lack of localizing value, the information it gives is very certain, and in the absence of all other symptoms a probable diagnosis can be rested on it.

A man struck by a brick was taken to a hospital in this city, treated, and discharged as well. But when in the ophthalmic clinic the surgeon examined his eye, he found double neuritis, and told him that he had some serious brain lesion. He went out from the hospital, however, and lived without symptoms for several months, then came to another hospital on account of failure of sight, and died there, and the autopsy showed a large cerebral abscess. Here the single symptom, optic neuritis, might have indicated meningitis, or a tumor, as much as an abscess, yet the certainty that it meant some gross lesion was sufficient to rest an approximate diagnosis and prognosis upon.

After neuritis we often have optic atrophy, differing in its appearances from *primary atrophy of the optic nerve*. Primary atrophy occurs without preceding neuritis, and is significant of an entirely different class of diseases of the brain and cord. It is significant of hydrocephalus, which by pressing on the optic chiasm, causes atrophy of both optic nerves. It is an important symptom of multiple sclerosis. In some cases it is a late symptom, not occurring until there are other well-marked symptoms. But in a few cases it is an early symptom. There are a few cases on record where optic atrophy has preceded any other pronounced symptom by many years. The atrophy alone will not fix the diagnosis,—there are few symptoms that are pathognomonic,—but atrophy taken in conjunction with other symptoms may be considered as pretty positive evidence that there is commencing sclerosis.

Another symptom which declares the presence of sclerosis, and the last to be here considered, is the so-called *Argyll-Robertson pupil*. It is sometimes spoken of as reflex iridoplegia. That name seems to give some notion of its pathology, but I think that the notion is probably a mistaken one. As it is difficult to give it a proper name we will continue to call it the Argyll-Robertson pupil. It is simply a failure of reflex contraction of the pupil on exposure to light. The circle of reflex contraction of the pupil, commencing with the retina and running back through the optic nerve to the basal ganglia, passes to the special centre for pupillary contraction, and then through the oculo-motor nerve forward to the sphincter of the pupil. Contraction of the pupil is brought about either by the impulse of light falling on the retina, and reflex action through this path, or it is brought about by the effort to use the accommodation or converge the visual axes. As a reflex to stimulation of some other sensory nerve, as by pinching of the cheek, etc., you may get reflex dilatation of the pupil.

The Argyll-Robertson symptom is said to be present when the pupil, reacting normally under other influences, fails to respond to the stimulus of light falling on the retina.

Why sclerosis tends to produce this special symptom we do not know,

but certain it is that at some point the passage of the normal impulse is interfered with. Whether it is interfered with by actual destruction of its path is doubtful. It may simply be held in abeyance by interrupting impulses from another source. This is not unlikely, for cases have been reported where the Argyll-Robertson symptom has passed away, with the occurrence of a stroke of apoplexy or other marked cerebral lesion.

This symptom is often associated with contraction of the pupil, myosis, so that the pupil not only fails to react to light, but it is abnormally small. They may be separate conditions, but they are so frequently associated that permanent contraction of the pupil is probable in these cases. This condition of spasm of the sphincter of the iris shows, in some cases at least, that it is an irritative lesion rather than one of paralysis or permanent destruction. The Argyll-Robertson symptom occurs in other conditions,—in the general paralysis of the insane, and where sclerosis is cerebral and not at all spinal; but in the majority of cases where it is marked, in about all the cases I have seen where it was absolute, there was spinal sclerosis. It may well be that when we understand the Argyll-Robertson pupil better we may classify it as a localizing symptom; but at present its principal significance does not consist in pointing to any certain part, but rather in declaring the presence and character of a general morbid tendency.

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### *A NEW METHOD OF POSOLOGY.<sup>1</sup>*

BY THOMAS LINN, M.D.,

Nice, France.

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M. EDOUARD TROUETTE has just presented to the Academy of Medicine a new method, called "By Duodecimal Doses," of toxic drugs that seems very practical, and destined to succeed the older ones. As long as the old pharmacopœias gave drugs that were more or less certain, and could be given in doses of rather good size without danger, it was well enough to go on as we do, but now that we have the alkaloids and concentrated drugs, we must needs be more careful. The toxic properties of these drugs being very variable, there results in the minds of the best-educated and most capable physicians an inevitable confusion, which leads them in general practice to prescribe doses that are mostly too small, or else, if they are possessed of hardy minds, they drift into giving doses that may easily become dangerous. It is in fact very difficult to remember the exact number of milligrammes or fractions of milligrammes (or grains, for that matter) of each of the drugs one needs to use. And when it comes to giving the

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<sup>1</sup> Prepared by our special Paris correspondent.



full therapeutical dose of digitaline, aconitine, strychnine, etc., it requires a good memory to do it without making the mistake of giving, on the one side, a useless dose or, on the other, a dangerous one. This being so, a number of doctors have given up the use of the powerful alkaloids, thus depriving themselves of excellent drugs for fear of doing harm.

The new method that M. Trouette proposes is a simple one. It consists of the rational division of the maximum dose that can be given in twenty-four hours. No matter what the nature of the drug or what its poisonous quality may be, the dose (*maximum*) that can be given in twenty-four hours is to be divided *into twelve doses*, whether it be pills, granules, wafers, pastilles, or what not. For instance, the maximum dose of digitaline being one and a half milligrammes, if given in granules, these must be divided into twelve, so that each one contains the twelfth part of the maximum dose.

This method is to be applied to all the dangerous drugs, so that a physician will have no difficulty. He has only to remember that twelve of any one of these pills or granules make the maximum dose per twenty-four hours, so that he may give it, according to the case, in doses of two or four every hour or two hours, or as he likes, in any case being careful to keep an accurate account of the number given. This *duodecimal* dose must be made very exact, so that the doctor has only to count by twelve, and give what he knows to be a fraction of an exact twenty-hours' maximum. Of course, he remains the only judge as to the dose to be administered at one time, according to the indications as to age, individual susceptibility, and also as to accumulation in the organism. If the druggists adopt this method, all the dangers due to over-doses will be prevented. The confusion owing to the difference between an amorphous alkaloid and a crystallized one, and that between a soft extract and a dry one, or a watery extract and an alcoholic one, will no longer exist.

M. Trouette took twelve as a division, as it is equal to the half day, of twelve hours, and it is easy to subdivide into twenty-four.

There is no doubt that, according to the present system, it is very difficult to remember the therapeutical dose and the poisonous one of all the drugs. Medicines that have similar effects often have very different doses. Take, for instance, quinine, antipyrin, phenacetin, salicylates, etc. There is also the danger that the patient will forget his prescription and not know what dose to take. In any case there is a great and real practical interest in simplifying doses of medicines, and it is to be hoped that wholesale chemists will take serious note of M. Trouette's method.

# CLINICAL LECTURES.

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## *SLOW PULSE; HÆMATEMESIS IN A CASE OF AMENORRHEA; THE DIFFERENT VARIETIES OF ASTHMA.*

CLINICAL LECTURE DELIVERED AT THE HÔPITAL DE LA CHARITÉ.

BY PROFESSOR POTAIN,

Paris, France.

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### SLOW PULSE.

GENTLEMEN,—This young man is eighteen years of age, and he presents some very curious nervous symptoms, that commenced only six weeks ago. At that time he was taken suddenly, without any apparent reason, with thoracic constriction, great oppression, and a feeling of general weakness with a tendency to syncope. This lasted about half an hour. Since that time these attacks have been renewed and once he has fainted. A careful examination of the patient shows that every part of his organism is quite normal except that his pulse-beat is only forty-eight per minute. The causes which produce slowing of the pulse are numerous. The more common causes, which have only a temporary influence, need not be taken into account. A slow pulse is found in cerebral compression, in certain cerebral embolisms, in neurotic cases, in very painful neuralgias, and in some functional abdominal affections, such as indigestion, colic, etc. Somerville cites a case of indigestion due to eating salt fish where the pulse fell to twenty-five pulsations, and remained so for a week. Certain affections of the larynx are at times a cause. The heart itself may be the cause, but much less often than many think. If we observe slow pulse in some cases of heart-lesion we must determine whether or not the slow pulse depends on the heart-disease or is due to some independent disorder. It is almost always seen in fatty heart. I can recall a case where the pulse was only fifteen to the minute, and at the autopsy softening of the whole heart structure was found. Poisoning by digitalis and other drugs will give a slow pulse. During an attack of jaundice also a temporary slowing up of the pulse is often observed. And finally, in many subjects, during convalescence from acute maladies, the pulse will drop as low as forty.

To all these causes must be added the interesting condition called "slow permanent pulse." It is clearly possible for a slow pulse to exist in a perfectly physiological state, as examples are numerous. One was a young Alpine hunter, who was very strong and yet never had more than thirty-two



pulsations per minute. Another was a hearty farmer who had only thirty-four. Vigouroux reports a case with only twenty. The late Professor Bécларd was fond of telling in his lectures that he had a normal pulse of fifty-six. To appreciate these facts properly, we must remember that one can get a false slow pulse,—that is to say, that there may be a certain number of pulsations that are not distinct to the touch, and which come in between the others. There are cases also where the rhythm is quite regular, and seems normal, but yet on auscultation, in the interval of the pulsations, will be heard a deadened sound like an attempted pulsation, showing a real cardiac systolic sound that has aborted. This is like the cases in which we get alternately strong and weak pulsations, the latter being sometimes impossible to be felt. While some of these cases may seem to be normal, still they will often be found subject to a certain number of symptoms, such as coldness of the extremities, buzzing in the ears, vertigo, syncope, etc. It sometimes happens that such attacks will become more and more frequent, and the patient will die at last, as a result of the slow pulse, unless some intercurrent affection or real cardiac trouble sets in. Perhaps this will be so for our patient, but for the present we cannot find anything wrong with his heart or any other organ, so that we must consider his case to be a neurosis, which, acting upon the medulla oblongata, has produced this slow pulse. That is all that can be said in regard to this case, and its etiology must remain undetermined. His gastric difficulties make this patient's pulse still slower, which is an interesting point to keep in mind. I remember an instance where a man had received a contusion of the epigastrium, and his pulse fell to forty per minute, remaining so for a long time.

It is, of course, difficult to make a good prognosis in such cases as the one before us. It is rare that some abnormal phenomenon does not present itself soon after such a slowing of the pulse, yet, as has already been stated, similar cases have been known to enjoy quite a long life. Napoleon the First was said to have a permanently slow pulse, but he was said also to have had epileptiform attacks. When slow pulse is found in old people it is nearly always a sign of serious and progressive cardiac alteration. The prognosis is serious in such cases. Caffeine is useful in some of these patients, but attention must be given to the digestive tract especially, and an attempt must be made to suppress any gastric reflex action, as this may be the origin of the slowing up of the pulse, and should therefore be eliminated.

#### HÆMATEMESIS IN A CASE OF AMENORRHŒA.

Our second case is a woman, with a complication of symptoms which will necessitate our entering upon some practical questions of considerable interest. She looks chlorotic, and has suffered from amenorrhœa, then hæmatemesis, and finally fibroids. The stopping of the menses was owing to her having accidentally caught cold; mark how quickly the blood from the stomach followed! Amenorrhœa causes the blood to go to the other viscera. This we constantly see as regards the lungs, particularly if they have

already been attacked by some previous lesion. Sometimes these kinds of hemorrhages will have their seat in other places, such as the ears, the kidneys, the bladder, the skin, etc. The reason why the blood has gone to her stomach is rather difficult to make out; we cannot find any ulcer of the stomach, but for some days before the attack she says she had nausea, no appetite, and general gastric disturbance. We can ask ourselves, though, why it is that women who are having regular courses and much gastric difficulty, dyspepsia, etc., do not have hæmatemesis. The reason is that this always takes place in patients who have shown great intensity in their reflex actions. This woman is hysterical, and you know to what extent this element must be considered in such a case. The important symptom is the hæmatemesis; but we must add that it appears in patients who are anæmic, hysterical, and lymphatic. Each of these elements has its importance in aiding diagnosis. As to the prognosis, it is rather favorable in this case, because the hæmatemesis came on after a slight gastric difficulty. The amenorrhœa is more troublesome to treat, and we can only hope that we may be successful. We cannot attempt to act upon the disease directly, as we did in former years, because, nowadays, we do not believe in emmenagogues. It is better to direct our efforts towards an improvement of the general constitution, and only use these latter drugs when there is some congestion or pain in adjacent structures. The valerianate of ammonia, given for a week before the usual approach of the menses, very often succeeds. Apiol is also useful a few days before the monthly period. The permanganate of potassium has also been recommended, but it is probable that it acts more by the manganese, which is a good succedaneum to iron, and is not so exciting. It succeeds admirably in tubercular cases and in heart patients where iron cannot be borne.

#### THE DIFFERENT VARIETIES OF ASTHMA.

True cases of asthma occur at night, or if they occur in the daytime, it is owing to some special cause. Cold or dampness will bring on an attack. If the attacks are always at night, that will be sufficient to establish the fact that it is a real case of asthma. Asthma may be purely hereditary in its etiology, and is often seen in young patients who have a predisposition to it. Another class would be the neuropaths, many of whom have premonitory symptoms: they feel weak and tired, without any power to rally, and then from past experience they know that they will have an attack the next day. Hysteria is often complicated by asthma, and sometimes the two will alternate.

Asthma is also seen in certain poisoning of the system, as malaria, arsenical, and lead-poisoning. Urticaria, when it follows the ingestion of shell fish, or the like, is the result of a poisoning, and is sometimes complicated by asthma. Asthma may also be produced by a reflex action, by a polypus in the nose and chronic gastro-intestinal troubles. We must not, however, consider every attack of dyspnœa that arises under such conditions as true



asthma. Finally, the kidneys may be the origin of the trouble. Those patients who have a calculus may have an asthmatic attack which terminates with the elimination of the stone. This may be true for either liver or gall stones. Interstitial nephritis will also occasion attacks of asthma, which arise from uræmia. This form of poisoning of the system is very curious, as it may give rise to so many different kinds of dyspnœa,—that from effort, the Cheyne-Stokes kind, and real asthmatic dyspnœa. In all these forms milk diet is to be recommended. The greatest care must be taken in examining all cases of asthma, and their exact nature should be determined.

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## INCISED WOUNDS; HEMORRHAGE; COLLAPSE; TRANSFUSION AND INFUSION.

CLINICAL LECTURE DELIVERED AT THE ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS.

BY LOUIS BAUER, M.D., M.R.C.S. (ENG.),

Professor of Surgery, St. Louis College of Physicians and Surgeons; Member of Medical Society of London; Hon. Member of Minnesota State Medical Society, etc.

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GENTLEMEN,—You are fully aware that hemorrhage is a frequent incident of incised wounds. Its prompt arrest forms the main indication in the treatment of such injuries. Having fully acquainted you with the means and measures of closing bleeding vessels, both by precept and practical demonstration, we may now invite your attention to another equally important and no less dangerous condition attendant upon those who have suffered from hemorrhage in excess of their individual endurance. It stands to reason that young and vigorous constitutions bear the loss of blood much better than feeble and aged ones. One per cent. of loss in the weight of the body by hemorrhage may be borne by either, but when it extends to two or more per cent., it becomes a serious question of life. The result of so considerable a depletion will manifest itself by extreme pallor, cold and clammy extremities, weak pulse and respiration, and general prostration of body and mind, the latter approaching to unconsciousness. This condition is termed by some writers *acute anæmia*, by others *collapse*. Only in the milder form of collapse, and in younger and more robust individuals, besides women, you may succeed in re-establishing animation by artificial warmth, compressing bandages at the extremities, stimuli administered per os, or subcutaneous injection; and even enemata (Herr) of a solution of chloride of sodium have successfully served such purposes. But in the higher grades of collapse you can hardly expect lasting benefit from such slender means. *The vessels must be filled again by known equivalents, in order to prevent heart failure.*

The discovery of the circulation (by Harvey), in 1648, probably furnished the impetus to the succeeding introduction of *direct transfusion of blood* (1667). To Prof. Jean Baptiste Denis, of the University of Paris, is ascribed the honor of having originated this contribution to the healing art. The suggestion created at the time the greatest enthusiasm among the profession, intensifying itself into a sort of mania transfusoria. But the excitement did not last. Both experimental and practical experience disclosed some dangerous results of the new plan. Denis had transfused lamb's blood into his patients, but it was very soon ascertained that the benefit of transfusion depended on *the blood of the same species*. Next, it was found that even the same species was not always available, and the transfusion of its blood brought danger to the patient in more than one way. Sometimes fibrin-ferment manifested itself in the new trouble of capillary thrombosis and embolism. Seemingly, under most favorable circumstances, the direct transfusion of blood provokes such violent and threatening symptoms of *cyanosis* and *dyspnœa* as to intimidate even the boldest of surgeons, leaving the impression that the remedy was as dangerous as the disease for which it was employed, if not more so. For these weighty reasons, transfusion was entirely abandoned. The fearless opposition of Panum and Landois contributed materially to the cure of the mania transfusoria. The few cases of successful transfusion, moreover, could not balance its numerous failures.

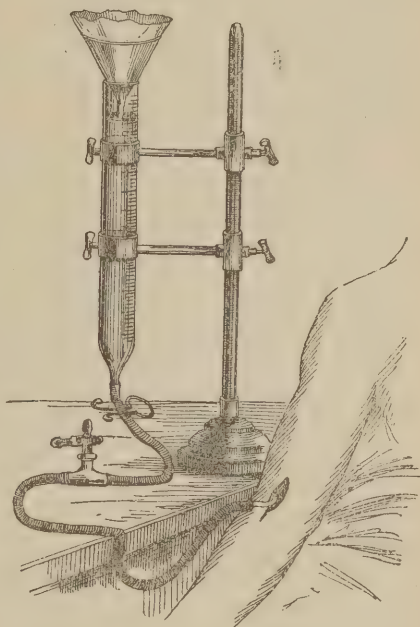
Gradually the impression prevailed with the profession that the successful preservation of life in the cases of transfusion did not so much depend on blood *per se* as on its mechanical action *in filling the vessels and the heart*, and thus sustaining their function. From this impression some methods were suggested to render the infusion of blood less dangerous, *by removing its fibrin, in beating and filtering it*. This was certainly a step towards the improvement of the new measure, and its results were more effective and beneficial.

The admixtures of chloride of sodium with defibrinated blood grew out of the knowledge of its being a physiological component. At last a six-per-cent. solution of chloride of sodium, without any further addition, was tried, and found as serviceable and beneficial as, and safer than, the former mixture. Thus the avenue opened for further experiment and therapeutic venture. Every year has since added to our knowledge derived from these sources, enhancing our confidence in the measure.

For the present purpose of our address we could conclude with a technical instruction showing the method by which we might fill the vascular system to meet the exigency of blood demand, but in doing so we would deprive you of a knowledge of the latest discoveries in this line, which are not only surprisingly interesting, but even promise a marked advance in the treatment of infectious and some other diseases. We beg first to refer to the labors of John Marshall, who experimented with a mixture of defibrinated blood and a six-per-cent. solution of chloride of



sodium. He withdrew from the carotid of a rabbit so much blood that the animal was seized with spasms, and replaced the same volume with the mixture just mentioned, it being composed of nine volumes of blood from the same animal, the remainder being chloride of sodium solution. When the animal recovered from the anæsthetic it very soon became lively and of good cheer. By means of the spectrophotometer (Hufner's), the number of blood-corpuscles and the percentage of oxyhæmoglobin were accurately ascertained. A week after the operation, the blood-corpuscles had been numerically reproduced, but it took twenty-three days after the operation before the oxyhæmoglobin had attained its former percentage. This is certainly a very surprising disclosure. Cohnheim, Lichtheim, and at a later period (1888-89) Dastre and Loye, had experimented with a pure injection of a physiological solution of chloride of sodium. They succeeded in multiplying *four times* the known quantity of the blood of animals without the slightest increase in the blood pressure. Along with the injection of that solution profuse micturition ensued in the animal, almost exactly proportionate to the amount injected. Thus, as Sahli affirms, a regular drenching of the entire system was effected, which promises to assume some importance in future therapeutics. With the passing of the liquid through the kidneys a considerable amount of urea and uric acid, gradually diminishing towards the end of the experiment, passed with the liquid. In some experiments Sahli succeeded in gradually introducing two litres of the same solution, with similar effect upon the kidneys, *by placing it under the skin of the abdomen*. The same method was employed by Prof. A. Fraenkel, at the Municipal Hospital of Berlin, and he succeeded in eliminating nitro-benzol poisoning from a patient. Mayet specifies the indications for intravenous injection as: first, to replace the blood and serum; second, the removal of toxic substances from the body, for which purpose he calls the method *lavage anti-toxique*; and third, the introduction of medicinal substances into the circulation. The first indication meets collapse or the loss of serum, as (*e.g.*) in cholera. The injection simply furnishes the mechanical means for washing away the comma bacilli, for which purpose the injection may have to be repeated. The second indication applies to infectious diseases in general; and the third suggests itself as the quickest and most effective method of bringing medicinal substances to bear upon the organism. Mr. Mayet specifies in quite a number of cases his procedures, for which we must refer you to the *Lyon Médical*, 1891, Nos. 19, 21, and 23.



Now, gentlemen, I show you the instrument (see figure) by which you can effect these infusions in a very simple and direct way. A compression of the subcutaneous veins of the arm above the elbow will soon fill and distend the vena mediana, upon which you divide the integument an inch and a half parallel to the direction of the vein. You isolate the vein and put three ligatures around it, of which you close tightly the peripheral one, close loosely the central one, then open the vein sufficiently to introduce the little glass tube, and relieve the restraint of the liquid so that it may enter without further obstacle. By the effects which the injection produces upon the patient you will be prompted either to interrupt the flow from time to time, or to permit it to flow continuously until you have produced the desired result. There is one precaution that should be observed in the beginning, and that is, that the liquid must occupy the whole length of the glass tube, so that no air can possibly enter the circulation. Having the instrument before your eyes, I need not specify its details.

In conclusion, gentlemen, I beg to say that the intravenous infusion of the chloride of sodium in the shape of a six-tenths-per-cent. solution constitutes one of the greatest discoveries in the science of medicine, for there is nothing of equal simplicity, directness, harmlessness, and efficacy that will bear comparison with it.

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## *STONE IN THE BLADDER; ABSCESS OF THE LIVER.*

CLINICAL LECTURE DELIVERED AT THE GERMAN HOSPITAL.

BY JOHN B. DEAVER, M.D.,

Professor of Surgery, Philadelphia Polyclinic, and Assistant Professor of Applied Anatomy, University of Pennsylvania.

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### STONE IN THE BLADDER.

LADIES AND GENTLEMEN,—The first patient upon whom I will operate to-day is a boy nineteen years of age, with a stone in the bladder. What are the symptoms of stone in the bladder? They are subjective and objective. The subjective are those elicited from the patient, namely, painful and frequent micturition, the pain being more pronounced at the end of the act, owing to the contraction of the sensitive mucous membrane at the neck of the bladder upon the stone; the pain also is referred to the end of the penis about one inch within the meatus; another striking example of referred pain is in hip-disease, where it is referred to the inner side of the knee. The objective evidences of stone in the bladder are its detection by means of the sound or the cystoscope, and the presence of blood and pus in the urine. In the case of young children it is not uncommon for them to grasp and pull at the prepuce, owing to the irritation occasioned by the



stone being communicated to this part of the organ; at the same time we may have associated with this symptom more or less prolapse of the rectum. When a child is brought to me with prolapse of the rectum, I never fail to explore the bladder for stone. In children the stone is most commonly of renal origin, while in the adult it more commonly originates within the bladder.

Of the different operations for stone in the bladder I will mention but four,—lateral, median perineal, and suprapubic lithotomy, and litholapaxy. Each of these operations, I believe, has still a place in surgery, notwithstanding the fact that the suprapubic is so well thought of, and recommended by many surgeons as fulfilling all the indications for the extraction of a stone from the bladder. I practise all of these operations, and therefore teach their indications. The ideal operation for stone in the bladder, to my mind, is litholapaxy, which consists in crushing the stone and washing the fragments out at one sitting. I contend that it requires as good judgment to select the proper operation in any given case of stone in the bladder as it does to decide upon the propriety of an operation in certain questionable cases of gangrene, therefore each case must be analyzed and judged upon its own merits. I will speak briefly for a few minutes upon what I regard as indications for each of the four operations.

*Median Perineal Lithotomy.*—Adults; very small stone; irritable and contracted bladder; marked cystitis; moderate-sized prostate.

*Lateral Perineal Lithotomy.*—Children under five years of age, medium-sized stone; adults where there is present a very bad cystitis, contracted and irritable bladder, medium-sized stone. Under these circumstances the lateral is preferable to the median operation. Owing to the wound being larger, the bladder can be better drained and the stone more easily extracted.

*Suprapubic Lithotomy.*—Adults and children; very large and hard stone; stone, the nucleus of which is a foreign body; marked enlargement of the prostate. Where the latter is present this operation gives the surgeon, after having removed the calculus, the opportunity of doing a partial prostatectomy, which operation enables the patient to live without the use of the catheter, or at least renders the passage of the instrument less difficult.

*Litholapaxy.*—Absence of Bright's disease; absence of cystitis to any degree; a non-contracted and retentive bladder, one which, if in an adult, will contain and retain six to ten ounces of boracic acid solution, or the equivalent amount of urine, and, if a child, from four to six ounces; a non-irritable urethra. This is determined by passing a steel bougie, the size of the urethra, for two or three days before the operation.

Should the urethra be the seat of a stricture or strictures, there being no other contra-indication to crushing, they should be either cut or dilated, depending upon their location; a prostate not too large to embarrass the ready passage of a large lithotrite and the evacuating catheter; a urethra

allowing the ready passage of the lithotrite and evacuating tube; a stone neither too large nor too hard.

Experience has taught us that litholapaxy is a more fatal operation in cases of Bright's disease than lithotomy. The greater fatality of litholapaxy over lithotomy in this condition is, I believe, due to the concussion of the bladder walls which occurs during the washing out of the fragments of stone.

The greater the amount of water in the bladder short of distending it, the greater will be the force of the wave displaced when forcing water into it with the evacuator. Therefore, it is the practice of operators not to have more than six to eight ounces of fluid in the bladder of an adult when ready to evacuate. By having too much fluid in the bladder, and using too great force in washing out the fragments of stone, this organ has been ruptured. In the cases where rupture has occurred the walls of the bladder were probably undergoing fatty degeneration.

I have said that litholapaxy is the ideal operation, and for the following reasons, namely, that, ordinarily, the patient is not confined to his bed, after this operation, longer than one week, when he is able to resume his previous mode of life.

The amount of pain is less than that after lithotomy, granting, of course, that the operation has been properly and skilfully done. Litholapaxy is never followed by a fistulous communication with the bladder through which urine constantly passes, to the great annoyance of the patient, which is a risk every patient on whom lithotomy is done assumes.

To determine whether or not litholapaxy was indicated or contra-indicated in the patient who is being etherized in your presence, his urine has been examined with negative result; the calibre of his urethra measured and found to be twenty-nine; it also showed the absence of any obstruction. A No. 29 steel bougie has been passed three or four times without occasioning any unpleasant symptoms, showing the absence of irritability of the urethra.

The prostate was examined per rectum, we not detecting, of course, in so young a man any enlargement.

The retentive power of the bladder, as well as its capacity, has been tested; the size of the stone determined with a small lithotrite, and found to be an inch and a quarter in diameter.

The chemical and microscopical examination of the urine and the examination with the sound lead me to believe that the stone is probably phosphatic in character. Although a day or two ago I detected the stone with the sound, I will again make the examination and see whether or not, with the aid of a sounding-board, I can make the click occasioned by the contact of the sound with the stone audible to you all. This I do very readily.

Had I failed, before refusing to go on with the operation, as is the rule with surgeons under such circumstances, I would have made a cystoscopic examination, when, if still unsuccessful, I should have postponed the operation.



The patient being now fully under the influence of the anæsthetic (and I emphasize the word *fully* because in this class of operations *particularly* it is important that full anæsthesia be induced), I introduce into the bladder a soft catheter, and through it inject eight ounces of a saturated solution of boracic acid.

I next withdraw the catheter and introduce a medium-sized Thompson crusher, with which, when it is well-engaged, I feel for the stone.

Having come in contact with it, I open the blades of the instrument, and with slight manipulation you see that I have grasped the stone.

I next fix the blades, so as not to lose hold of the stone when I depress the handle of the crusher, and bring the beak of the instrument well into the centre of the bladder, where, on revolving it, I find it moves readily, thus demonstrating that the mucous lining of the bladder has not been grasped with the stone. By turning the screw at the base of the handle I reduce this stone to fragments.

The fragments, as was the stone, are grasped by the lithotrite and reduced.

You will note that I have continued this manipulation until I am no longer able to grasp a fragment of any size.

I therefore withdraw the crusher, and, strange to say, it is arrested at a point in the urethra, about two inches behind the meatus. The cause of this I do not understand, as the blades are certainly in apposition, as indicated at the base of the handle of the instrument. I will make fairly strong traction on the instrument, at the same time endeavoring not to tear the urethra, to see whether or not I can withdraw it. This I am able to do, and within the grasp of the blades you perceive what evidently is a piece of leather shoestring about four inches in length. This was undoubtedly introduced from without and formed the nucleus of the stone. This makes the fourth case of stone in the bladder, upon which I have operated, where a foreign body formed the nucleus of the stone. Of the other three cases, all of which were females, the foreign body in one was a hair-pin, and in the remaining two a silk ligature. The ligatures had ulcerated their way into the bladder from the stump of the pedicle of an ovarian tumor. I next introduce this evacuating tube or catheter, the calibre of which is twenty-seven millimetres, two millimetres less than the size of the urethra, which, you will recollect, measured twenty-nine millimetres. This tube is fashioned after the pattern of Otis, differing from Bigelow's in that it is straight and has a larger fenestrum at the bladder end.

To this, the free end of the catheter, I attach the Otis evacuator and proceed to wash out the *débris*, which, you will note, is done by making gentle pressure upon this rubber bulb, thus throwing the boracic acid solution, with which the evacuator is filled, into the bladder, while the *débris* is washed out and deposited in the reservoir of the instrument.

You will also note that the liquid pumped out of the bladder is but little if any discolored, showing that the mucous lining has been left intact.

A considerable amount of *débris* now occupying the reservoir, I detach

the evacuator and empty the reservoir, when I find together with the fragments of stone two pieces of shoestring, each about half an inch in length.

The evacuator is again filled with boracic acid solution, attached to the catheter, and the bladder rewashed, when, as you will see, some fragments again appear in the reservoir. I again detach it, and in it I find two more pieces of shoestring, each about half an inch in length, these with the other pieces having evidently been bitten off by the crusher.

I again fill the evacuator and wash out for the third time, when failing to remove any further fragments I detach it, remove the catheter, and introduce a sound, with which I explore the bladder, but am unable to find any fragments; therefore it simply remains for me to withdraw the sound, introduce a rubber catheter, and evacuate the bladder. I now wash it out with boracic acid solution, which you see escapes perfectly clear, withdraw the catheter, and introduce into the rectum a suppository composed of one quarter of a grain of morphine and ten grains of quinine.

The patient will now be returned to bed, and warm bottles applied to the body.

The after-treatment will consist simply in the administration of morphine in small doses if there is pain, two grains of quinine by the mouth four times daily, Buffalo lithia water given *ad libitum*, and the patient confined to a liquid diet for two or three days.

For the first forty-eight hours I will have the urine drawn with a soft catheter and the bladder washed out twice daily with boracic acid solution. After this the patient will be allowed to pass his water voluntarily.

I neglected stating that the preparatory treatment consisted in giving three grains and a half of salol with five grains of boracic acid four times daily for the past five days, and in clearing out the bowels immediately before the operation. The object of this treatment is to asepticize the urine, therefore rendering complications less liable to occur.

#### ABSCESS OF THE LIVER.

The second patient I will bring before you is a man, aged forty-two, transferred to me by my colleague, Dr. Wolff.

Seeing the patient now for the first time, and not familiar with either his history or his condition, I will ask Dr. Wolff, who is present, to kindly say a few words to you, explaining why the case has been placed under my care.

From what Dr. Wolff has said, I have no hesitancy in concurring with him in the opinion that this man is the subject of an hepatic abscess, and, if such is the case, there is no question about the advisability of immediately evacuating the same.

The operation of opening a liver abscess is technically known by the name of hepatotomy.

When the urgency of the case does not demand immediate evacuation,



this operation can be done in two steps, the first consisting in exposing the liver at the site where the incision into it is to be made when the serous covering of the organ is stitched to the parietal peritoneum around the margins of the wound, the object of this being to have the peritoneal cavity shut off by inflammatory adhesion, so that when the abscess is opened, two or three days later, there will not be any danger of the pus finding its way into the peritoneal cavity. This part of the operation is known as hepatorrhaphy.

When the case is very urgent it may not be justifiable to resort to this, fearing that the abscess will rupture into the peritoneal cavity; therefore, it is necessary to open it at once, and in order to prevent the escape of pus into the cavity of the peritoneum, we introduce sponges at the site of the incision into the liver, between the serous covering of the liver and the parietal peritoneum around.

Under the latter circumstances there is much more likelihood of the peritoneum becoming infected, therefore it is attended by more risk.

As the most prominent portion of the swelling in this case is to the right of the linea alba, I will make the incision over the summit of the prominence in a vertical direction, which brings me directly down upon the rectus muscle. I cut through the muscle, when I expose the posterior layer of its sheath; this I will take up and divide the full length of the incision, in this way exposing the transversalis fascia, which I find is infiltrated, suggesting that nature has shut off the general peritoneal cavity by inflammatory adhesions.

This upon further dissection I find to be so, therefore I will at once open the abscess, from which you see escaping a large quantity of purulent matter.

I next wash out this cavity with boracic acid solution, introduce to the bottom of the cavity a glass drainage-tube, around which I pack the cavity with iodoform gauze. I will also pack the wound with the gauze, apply an iodoform-gauze dressing, and return the patient to bed.

[Both of the above cases were shown to the class the following week. The stone case walked into the amphitheatre well, while the man with abscess of the liver was brought in on his bed and dressed. The latter is improving rapidly, as is shown both by his appearance and the chart, which contains a record of his pulse, temperature, and respirations.

The subsequent history of the stone case having proved quite unique, I will include it with the above lecture. The boy continued to complain, just as he had done previous to the operation, of pain when passing water, more marked at the end of the act, and an examination with the Leiter electric light cystoscope revealed a foreign body at the base of the bladder. I therefore cut him through the perineum and removed sixteen inches of shoestring, making, with the pieces removed at the crushing, twenty-two inches in all. The reason I did not attempt to remove it with the lithotrite was owing to the presence of a cystitis, and the fact that the pieces of the string previously removed were so brittle.]

*A CASE OF ANEURISM OF THE AORTA.*

CLINICAL LECTURE DELIVERED IN THE MONTREAL GENERAL HOSPITAL.

BY RICHARD LEA MACDONNELL, M.D.,<sup>1</sup>

Professor of Clinical Medicine in McGill University; Physician to the Montreal General Hospital.

GENTLEMEN,—Lying in Ward 11 there is a patient whose condition, you can see at a glance, is very serious. As you enter the ward the stridor of his breathing attracts your attention. The decubitus is remarkable. He lies on his right side, with the shoulders against a bed-rest, the head bent downward and forward. The expression is one of the most intense anxiety. Nothing would induce him to move his body even in the slightest degree. This unfortunate man is the subject of a large thoracic aneurism, which, having eaten through the front of the chest, is rapidly increasing in size. His sufferings will soon end, for the tumor has thin walls and will soon burst either internally or externally, or else the sac will increase its pressure upon the trachea and suffocate him. His history is as follows:

W. B., aged thirty-three years, Pullman-car porter, colored, was admitted into the surgical wards of this hospital in September last, and was transferred to my wards on the 7th of October following. He had then well-marked symptoms and the physical signs of innominate aneurism. In the early part of this session the clinical features of the case were demonstrated to the fourth-year class, the members of which will doubtless remember that the tumor did not project above the level of the chest-wall, and that in order to map out the limits of the pulsating area I was obliged to resort to the device of gumming to the skin little upright slips of paper, in order that very slight movements of the surface might be made manifest. He remained with us up to December 6, having derived much benefit from treatment (rest and the iodide of potassium), but, becoming impatient, he left of his own accord. Up to a fortnight before readmission (January 26, 1891) he did very well, but dyspnoea, pain in the shoulder, and stridor of breathing set in about that time, and he then for the first time noticed the swelling in his chest. There is now below the sterno-clavicular articulation a prominence which is as large as a cricket-ball and projects markedly above the chest-level, probably about one or two inches. It is pulsatile, and gives to one's hand the feeling that it is thin-walled and that its fluid contents are not far from the surface.

The patient is young for the occurrence of aneurism, which generally appears at that period of life when the arteries are beginning to undergo degeneration, and when active work with the muscles has not yet been given up; hence we find most of our cases occur in men at or about middle

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<sup>1</sup>Since deceased.



life. In twenty-six cases, the notes of which I have before me, I find the average age on admission to be 43.6 years. Thirty-three, the age of this patient, is not the youngest I have recorded. In one case, which ended fatally, the patient was only thirty.

W. B. is colored, and was a barber all his life until last summer, when he became a porter for the Pullman Car Company. It would seem that hard muscular work with the arms is a potent cause, and I thought that this case would show that sudden change of occupation and the great strain put upon the arms in the making up of beds has brought about the aneurism, but close examination elicits the fact that the early symptoms appeared while he was a barber. The fact that our last patient with aneurism was a colored barber is merely a coincidence. In our experience in this hospital hard work with the arms has preceded the appearance of the aneurism in nearly every case. Of those which have come under my notice during the last five years, the occupations have been as follows: day-laborers, ten; soldiers, four; sailors, four; porters, two; lumbermen, three; bricklayer, one; journeyman furrier, one.

A history of syphilis is frequently present in cases of thoracic aneurism. There is scarcely a case in which it can be excluded. We have none here. Nor is there any history of intemperance. These two causes act probably by bringing about degenerative changes in the walls of the vessel which facilitate the production of aneurism. The middle coat is the one which in aneurism is most commonly involved, and it is the middle coat in which an arteritis is set up by syphilis. The three causes—normal senile change, syphilitic arteritis of the middle coat, and a blood-pressure subject to intermitting increase—tend all together or separately to bring about aneurism.

Aneurism of the innominate usually begins with cervical neuralgia, which is the result of pressure upon the nerves in the upper part of the thorax. As a clinical observation, one of the earliest symptoms is pain in the neck and behind the right ear, the area supplied by the ascending branches of the superficial cervical plexus. In four cases of innominate aneurism which I have had under observation recently, the initial symptom was this severe neuralgic pain in the right side of the neck extending to the back of the right ear. The next area involved was that supplied by the intercosto-humeral nerve and the second or third intercostal. The patient says that before admission he had most severe pain in the armpit and upper part of the chest for about three inches down. He was therefore supposed to have pleurisy, and was treated by various doctors for that complaint and for rheumatism.

The innominate artery proceeds from the commencement of the transverse portion of the arch to the sterno-clavicular articulation, where it bifurcates, coming to an end just at the upper level of the clavicle. You remember we used to say in the dissecting-room that a probe passed backward through the interval between the sternal and clavicular portion of the sterno-mastoid muscle would just come upon the bifurcation. The parts

in front of the artery are the presternum with the muscles that arise from it, the remains of the thymus, and lower down the left innominate vein. Behind, the lower part of the artery rests upon the trachea, while the upper part is in contact with the left pleura. On the left side is the left carotid artery below and the trachea above. On the right side is the right innominate vein.

The sternum, forming part of a ring around the upper part of the chest, offers such firm resistance to expansion that in aneurism pain becomes an early symptom. This is one reason why neuralgias of a particular kind are more commonly met with in innominate aneurism than in those affecting other parts of the arch. If there were more room for expansion, there would be less pressure upon nerves. In a case of supposed innominate aneurism (I say *supposed* because there was no autopsy), which I had under observation in 1885, there was severe pain in the right side of the neck and behind the right ear. The patient's sufferings met with sudden and unexpected relief in the spontaneous dislocation forward of the sternal end of the clavicle. Eventually in most cases the sternum is eaten through,

and nothing holds the aneurism in check but the integument and its own sac. When the disease has reached these extreme lengths, pain becomes less urgent, for the reason that there is more room in the chest.

When we consider the relations of the first part of the arch and those of the innominate artery, we cannot help feeling surprised that interference with veins is not more commonly observed. In some cases œdema of the right side of the neck and thorax is well marked; in other cases the head and neck are uniformly swollen. I recollect a case in these wards when I was a student, where the face and head were extremely œdematous and cyanotic. In this case, however, the aneurism involved the first part of the arch and not the innominate artery. In a case under observation two years ago, there was œdema of

FIG. 1.

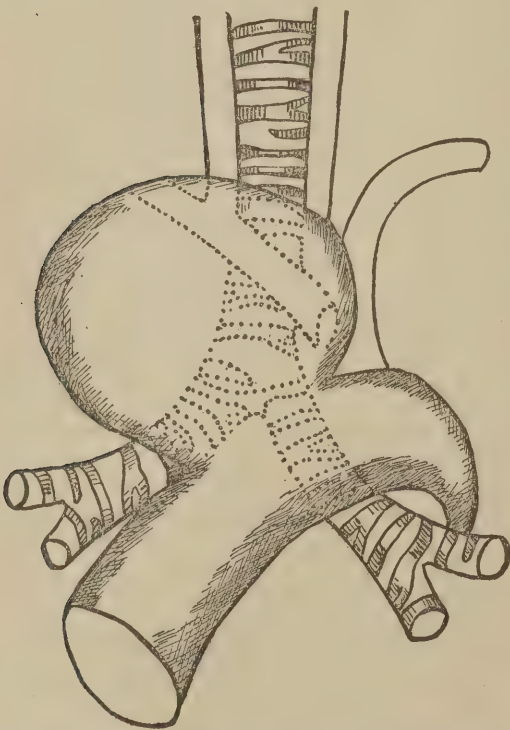


Diagram representing the origin and relations of the aneurismal sac. The innominate artery (represented by dotted lines) arose from the back of the sac and was firmly compressed against the trachea.

the neck and varicosity of the thoracic veins; and in another case I met with in the Out-Door Department, the varicosity was extreme. The veins were much enlarged, and coursed over the abdomen and chest in a serpentine manner.



The relation of the innominate artery to the trachea explains the stridor which is so marked a feature in the latter half of the history of the case, though it was, to our knowledge, present from the first admission. The trachea is directly pressed upon, and the irritation thus produced gives rise to the cough and dyspnœa. If one may draw an argument from the anatomy of the parts, we might say that the starting-point of the aneurism was near the root of the innominate, for cough and stridor were early,—almost as early as the neuralgic pain behind the ear.

Of all the aneurisms that of the innominate is the one which is likely to press most severely upon the trachea, if the tumor be low down. Yet it does not communicate pulsation to the larynx. I have never been able to demonstrate *tracheal tugging* in aneurism involving the innominate or the first part of the arch. You have seen me looking for this physical sign in all cases of suspected thoracic aneurism. The patient is directed to hold up his chin, so as to put the trachea upon the stretch. You grasp the box of the larynx with thumb and forefingers, and in certain forms of thoracic aneurism a pulsation synchronous with the heart's action will be distinctly felt. The cricoid will be most distinctly tugged downward at each beat. This physical sign you will not find mentioned in your ordinary text-books. So far as I know, it is mentioned only in the article "Aneurism" in Pepper's "System." It was first demonstrated to the profession by Dr. W. S. Oliver, now of Halifax, and it has been sought for in these wards since 1878. Dr. George Ross, who has taught its value here, and who first drew my attention to it, believes that no other tumor but an aneurism can produce it, and I agree with him in that opinion. Moreover, I believe that it seems to distinguish the part of the arch involved. It is absent, according to the records of this hospital, in aneurisms of the innominate and in those of the first and third parts of the arch. It is an evidence, in my opinion at least, of pressure from above on the left bronchus and notch formed by the trachea with that tube, and the symptoms with which, clinically, it is often found associated are paralysis of the left vocal cords and weak breathing at the left pulmonary base. I cannot in a lecture prove this explanation to be correct by reference to our case-books, but I hope soon to marshal my records in print, when you may have opportunities of criticising them. The absence of tugging in this patient goes to prove that the transverse arch is not the seat of disease. The innominate or the ascending arch or both are involved.

The relation of the innominate to the pleura gives rise to a pleurisy in some instances, but the process does not extend and is not accompanied by effusion. The "pleurisy" which formed one of his earlier complaints may have been real.

The effect of the aneurism on surrounding arteries is very remarkable. You know that surgeons have tied the carotid and subclavian for the cure of innominate aneurism. Here nature did the very same thing. On admission we were unable to find any pulsation in the arteries of the head or in the

right arm,—no pulsation in the radial, brachial, subclavian, carotid, or temporal arteries. A clot had blocked up the bifurcation, and the supply was completely cut off.

You know what happens in such cases. When a city thoroughfare is completely blocked up, we have to make our way around the obstruction by the back streets and lanes. Traffic is not suspended, and in a short time we become accustomed to the roundabout way and cease grumbling. So with an artery. Collateral circulation is set up, the arterioles swell themselves into arteries, small arteries assume the duties of larger vessels, and in a short time the circulation is carried on nearly as efficiently as before.

Several students have asked me at the bedside how it was that the arm was not gangrenous, or, in fact, as outward appearances go, no worse nourished than the other. My answer has been that the upper extremity has always been found to adapt itself to alterations of blood-supply, and that here the change was probably very gradual, so that the small arteries have had time to adapt themselves to altered circumstances. I have been asked, too, at the bedside, to explain how the blood gets to the parts if the innominate be blocked. Many channels have, no doubt, been opened up. The thyroidea ima may be in existence. The intercostal arteries which come from the aorta communicate freely with branches of the axillary both in front and behind the shoulder-joint. The right side of the head can easily borrow its blood-supply from the terminal arterioles which anastomose across the face. Lastly, although the pulse was at one time not perceptible, yet there may have been some blood in it, for since his return the pulse at the wrist has been counted. This result may be due either to some alteration or displacement in the clot itself or to a diminution of or an alteration in the relative portions of the aneurism.

The effect on the heart has not been great. There is no evidence of its being either enlarged or displaced. The sounds are fairly normal. During his previous stay in the hospital the limits of the aneurismal tumor were always well defined. There was a slight prominence of the chest-wall occupying the corner between the inner end of the right clavicle and the sternum, about two and a half inches in diameter, over which percussion is dull, and pulsation perceptible to the hand. No thrill. The heart-sounds are plainly audible over the dull area. At times a systolic murmur was heard. No diastolic shock.

The cough was brassy, a distinctive symptom, I will not say of aneurism, but of pressure upon the trachea. A few days ago I heard such a cough from the waiting-room in my own house. I said to myself, "There's a thoracic aneurism." I was not quite right, for it turned out to be our old friend P. T., the patient with Hodgkin's disease on whom I lectured last autumn. Some of the enlarged glands were pressing upon his trachea.

There was no pressure which in any way interfered with his lungs, beyond the pressure on the trachea which rendered stridulous breathing



audible over the whole chest, or with his laryngeal nerves. As a rule, this is the case in aneurisms of the innominate. It is especially in those of the transverse arch that laryngeal paralysis is observed. This result is owing to the loop formed by the left vagus around the transverse arch. Pressure upon this produces paralysis of the muscles of the left cord, if the enlargement of the aorta is so situated as to drag upon the nerve and stretch it.

To define exactly the part of the vessel involved in the aneurism is not practicable. Possibly the tumor may involve the first part of the arch as well as the innominate, but, for the reasons already given, I believe that the transverse arch is free from disease, and that there is nothing to point to the descending or thoracic aorta as being involved.

The clinical features which specially point to the innominate are,—

1. The early and pronounced character of the external tumor. The innominate lying just behind the chest-wall produces more readily than any other aneurism an external tumor.

2. Pressure on the trachea is a prominent effect in this case. The decubitus is noteworthy. He lies on the right side, to take the pressure off the trachea, a contrast to our patient Hugh G., here last winter, who found he could lie more comfortably on his left side. In the latter case the aneurism, which was the size of an orange, was pressing into the notch between the left bronchus and the trachea.

3. Pain in the right side of the neck and behind the right ear was an early symptom.

4. Interference with the circulation in the right arm and the right side of the neck and head.

5. Pain in the chest itself was not frequently complained of. It is met with more commonly in aneurisms of the arch itself than in those of the innominate.

*Treatment.*—During his former residence in the hospital he was kept in bed, fed upon ordinary diet, and given ten or fifteen grains of iodide of potassium three times a day. Improvement followed. Pain was relieved, and, as far as we could make out, the tumor did not increase in size. On his readmission symptoms had to be relieved. We kept him constantly under the influence of morphine, and at one time when suffocation was imminent I ordered venesection. The withdrawal of this quantity of blood relieved the pressure for a short time and gave slight relief.

The sudden enlargement of a thoracic aneurism, after it has been quiescent for a long time, is not uncommonly observed, and it admits of two explanations, both of which may be correct. The sac may protrude through an opening and spread itself into the softer tissues. The dissection of such a case was recorded in the *British Medical Journal* of April 12, 1890, by Surgeon-Major Browne, of the Madras army. The aneurism, which affected the thoracic aorta, had a primary and a secondary sac, the latter protruding from the back and being of rapid growth. We saw the same thing occur in the case of David J., who had been under my observation

for four years with an aneurism of the arch which manifested itself by a pulsating flat area between the left scapula and the middle line. This suddenly began to enlarge and formed a sausage-shaped tumor upon the back thirteen inches long by two inches wide.<sup>1</sup>

Another explanation of this sudden enlargement lies in the fact that the process of absorption of bone is slow, and that after erosion has proceeded up to a certain point the further progress is very rapid.

[The notes from which this lecture was given were prepared before the death of the patient. I gave the lecture exactly as I had prepared it, and subsequently read the autopsy report.]

REPORT OF AUTOPSY PERFORMED FEBRUARY 2, 1891, BY DR. WYATT JOHNSTON, PATHOLOGIST OF THE MONTREAL GENERAL HOSPITAL.

Body of a well-developed young man; a mulatto; rigor mortis marked at all joints; slight lividity over back; no enlargement of superficial veins, and no œdema.

In the right infra-clavicular region was a smooth, rounded bulging of the chest-wall, extending from the middle line of the sternum twelve centimetres to the right, slightly beyond the middle of the clavicle, and reaching vertically from the clavicle to the lower border of the third rib. This swelling was tense and fluctuating, and projected at the centre about two centimetres beyond the level of the rest of the chest. The skin over it showed nothing unusual.

On removing the skin from the thorax nothing abnormal was noticed in the skin or subcutaneous tissue, but in attempting to dissect off the pectoralis major the knife entered a large space filled with soft, dark blood-clot.

The thoracic organs, the portions of the chest-wall involved by the sac, and the organs of the neck were all removed together.

Upon examination a large aneurismal tumor was found to occupy the upper part of the mediastinal regions, displacing the heart downward. The sac of the aneurism formed a mass about the size of the two fists, and lay in the right side of the aortic arch, extending upward to the clavicle. It was intimately connected with the right bronchus and lay in front of the trachea. The left bronchus lay quite free from the tumor. The left recurrent laryngeal nerve was normal.

The ascending arch of the aorta was ten centimetres in circumference (normal, eight centimetres). The orifice of the sac was situated nine (?) centimetres above the aortic ring, and was seen to be circular and well defined, with rounded edges, and to occupy the region of the junction of the first and second portions of the arch along the upper border. It measured four centimetres in diameter, and lay just to the right of the origins of the left carotid and left subclavian arteries. The origin of the innominate artery could not be seen. The right subclavian and right carotid arteries lay at the upper end of the sac, and probes passed down through them into the aorta seemed to pass through the sac.

On slitting up the sac, however, the orifice of the innominate artery was seen as a valve-like opening situated on the left wall of the sac about half an inch from its junction with the aorta. After removing a quantity of soft, grayish, laminated clot which almost filled the aneurism, it was seen that the innominate artery was very closely connected with the left border of the sac, its lower part being pushed completely over to the left of the trachea and bound to the thin sac-wall by connective

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<sup>1</sup> American Journal of the Medical Sciences, June, 1890.



tissue. The length of the innominate was seven centimetres from origin to bifurcation. Both the main vessel and the right carotid and subclavian were free from clot and of normal calibre, but seemed considerably flattened from the pressure of the aneurism.

Anteriorly the sac was adherent to the chest-wall, and at the junction of the first rib with the sternum its anterior portion was defective and opened directly into a hæmatoma with ill-defined hemorrhagic walls formed by the posterior surface of the pectoralis major and the connective tissue beneath it. This external sac extended out almost to the right axilla. The first right costal cartilage had completely disappeared, and the rough end of the first rib and a corresponding portion of the sternum, both bare of periosteum and very rough, lay entirely within the sac.

Posteriorly the sac pressed upon the trachea and right bronchus, both of which were flattened and apparently compressed. The trachea was bound firmly to the aneurism. The tracheal mucosa was intensely reddened throughout and covered with thick mucus. Beneath the mucosa innumerable minute translucent gray bodies could be seen, evidently the swollen submucous lymph-follicles. A spot of erosion about the size of a ten-cent piece was seen on the anterior surface of the trachea four centimetres above the bifurcation. In the base of the ulcer lay the end of one of the cartilaginous rings, of which the central part had been destroyed.

The larynx, pharynx, and œsophagus were normal.

The right lung weighed nine hundred and twenty grammes, and showed a thin coating of soft fibrinous lymph in the axillary region. The bronchi were reddened and filled with thick mucus. The lower half of the upper lobe and the whole of the middle lobe presented numerous small, scattered, grayish areas of consolidation, averaging about one centimetre in diameter. The lower lobe contained a good deal of blood and showed a slighter degree of consolidation. The left lung was crepitant throughout, and weighed five hundred and twenty grammes.

The heart was rather large; both ventricles were roomy and their walls thick; muscle-substance of good color; valves normal. Thoracic and abdominal aorta free from atheroma.

The kidneys were large and firm; capsules somewhat adherent. The right weighed one hundred and ninety grammes; the left two hundred grammes.

The remaining abdominal organs showed nothing special. The brain was normal.

#### POSTSCRIPT.

The situation of the aneurism rendered diagnosis of its exact position an impossibility. The inference drawn from the absence of tracheal tuggings—viz. that the transverse arch was not involved—proved to be correct. I have always taught that direct pressure upon the trachea does not produce tugging, but that it is always the result of pressure either upon the left bronchus or on the fork between it and the trachea.<sup>1</sup> Here there was great pressure upon the trachea and right bronchus from the front, but no pulsation was communicated to the larynx.

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<sup>1</sup> See the Medical News, February 15, 1890.

AMPUTATION OF ARM AND SCAPULA; TUBERCULOSIS  
OF TONGUE; MALIGNANT TUMOR OF BRAIN; CÆSAREAN SECTION; RESECTION OF THE INFRA-ORBITAL  
AND FACIAL NERVES FOR OBSTINATE NEURALGIA;  
LAPAROTOMY FOR TYPHOID ULCER.

ABSTRACT OF A CLINICAL LECTURE DELIVERED BEFORE THE BRAINARD MEDICAL  
SOCIETY OF WISCONSIN.

BY N. SENN, M.D., PH.D.,

Professor of Surgery in Rush Medical College, Chicago, Illinois; Attending Surgeon to the Presbyterian  
Hospital; Surgeon-in-Chief to St. Joseph's Hospital.

CASE I.—GENTLEMEN,—This man is thirty-six years old; he is the subject of a large *sarcoma*, involving the scapula, the outer third of the clavicle, and the contiguous tissues of the left upper extremity. One year ago the trouble began by severe pain in the posterior margin of the axilla, and the development of a tumor. Several months ago the tumor was removed, but other and distant tissues had been invaded, and a quick relapse followed in the cicatrix. The tumor was as large as a child's head, and involved the scapula and neighboring structures, extending along the vessels and lymphatics. Round-celled sarcoma invades the tissues, and extensive dissections are necessary to remove all the infiltrated tissues.

The whole upper extremity was removed a short time ago by two incisions, the one vertical and the other at right angles to it. The flaps were dissected off, the subclavian artery and vein were ligated, and then the outer third of the clavicle with the scapula and underlying tissues, together with the entire arm, was removed. There was slight loss of blood on account of previous ligation of the blood-vessels. Iodoform gauze was insufficient to carry off the primary wound secretions, and we had later to substitute drainage-tubes. The wound remained aseptic, and the entire wound healed by primary intention.

He may now remain free from recurrence for one or more years. If the embryonic tissue-elements do not return in the scar, and our efforts at removal of all infected tissues were successful, he may be exempt for many years. Embryonic cells keep the disease in latent form until some cause may at any time force a new evolution. Billroth puts great stress on the fact that if carcinoma does not return in three or five years relapse will not occur, but this does not hold equally good in sarcoma.

TUBERCULAR ULCER OF TONGUE.

CASE II.—This man is between fifty and sixty years of age. He has an indurated, swollen, indolent ulcer on the right edge of the tongue near the tip. This first appeared about three years ago, and healed about eighteen months later. Lately it broke out again in the hard base, with swelling along the under surface towards the base of the organ. This is an unhealthy ulcer with a yellowish-gray membrane covering it. The lymphatics are not involved to any great extent.

Is this carcinoma? a traumatic ulcer from contact of the tongue against sharp, carious, or displaced teeth? Actinomycosis? Syphiloma? Tuberculosis? It is not a traumatic ulcer, judging from the position and appearance of the teeth.



It is not cancer of the tongue, because there is no dense infiltration of the surrounding tissues, no enlargement of the sublingual or submaxillary lymphatic glands, and, besides, the ulcer has healed once, a year and a half ago, which never happens in lingual or any other form of carcinoma.

It cannot be actinomycosis, for the epithelial layer was first involved; this never happens in that disease.

Gumma is out of the question here. A few years ago Esmarch directed attention to the mistakes so often made in diagnosing between cancer, syphilis, and tuberculosis, especially of the tongue and mouth. In many cases the syphilitic infection is either forgotten or ignored by the patient. Age also predisposes to certain conditions. A syphilitic gumma is composed of submucous granulation-tissue, always the result of previous infection, and which does not undergo early ulcerative destruction.

In this case there is no history of syphilis, and the ulcer as well as the infiltration around and beneath it presents all the characteristic features of tuberculosis.

Tuberculosis of the tongue is known but a few years; no doubt two-thirds of all cases operated upon for cancer of the tongue with recurrence of the disease were cases of tuberculosis or syphilis.

This man has coughed more or less for ten years past, and physical examination reveals tubercular infiltration in the apex of one lung. Our diagnosis is confirmed. But where did the infection begin? In the lungs or in the tongue? No doubt a minute trauma existed at some time through which auto-infection occurred from the sputa ejected by coughing. The primary infection was in the lungs, and this ulcer is a secondary affection caused by the entrance of tubercle-bacilli into the tissues through some minute surface defect.

The local treatment will be by iodoform. This treatment is utterly useless if the drug is applied to the surface of the ulcer. To be successful it must be injected into the tissues. First abolish the infection-atrrium by cauterizing the surface with the *Paquelin cautery*, and follow the bacilli with parenchymatous injections of iodoform emulsion.

Metschnikoff's phagocytosis theory is beautifully illustrated in tuberculosis by these injections. We assist the phagocytes in their struggle against the bacilli. We cannot use Verneuil's ether-iodoform here, hence we shall use a ten per cent. emulsion made with oil or glycerin.

[The surface of the ulcer was thoroughly cauterized with the knife-point of a *Paquelin cautery* heated to a dull red heat.]

### MALIGNANT TUMOR OF THE BRAIN.

CASE III.—This man, about twenty-six years old, is now totally blind, the loss of vision being due to an intracranial tumor, which has caused at the same time loss of co-ordination as indicated by a staggering gait and uncertainty of movements of the hands; the pupils are widely dilated, the optic disks congested; apparently this tumor involves the base of the brain near the pons.

In inoperable tumors of the brain Kocker recently made large openings in the skull for the purpose of postponing the evil results of compression of the brain by removing the pressure. We have trephined twice, once on each side, after an interval of six weeks, removing each time a large oval disk with chisel and hammer. This gave the needed room to the cerebral mass, and each time the operation was followed by decided improvement.

The pulsatile swellings observed in these "windows" in this man's skull might be called "*herniæ cerebi*." They pulsate synchronously with the heart's action. A rapid cerebral anæmia is produced by compressing these swellings, and continued firm pressure, as you see, produces convulsions and syncope. This is a beautiful

physiological experiment. When the pressure is removed the circulation is quickly restored, and the patient returns to his previous condition. Dr. McBride will give you some further information in reference to the exact location of the tumor. "We believe the tumor involves the region of the tubercula quadrigemina, because there is (1) paresis and incoördination; (2) atrophy of the optic disk; (3) staggering gait, and (4) lateral nystagmus. Application of the galvanic current causes motion of the leg on the opposite side. This case cannot be benefited by operation. Improvement will be only temporary. The mind will also become affected sooner or later.

"In another case of infiltrating sarcoma of the motor region, involving both hemispheres, there was paralysis of both legs and arms, optic disk atrophy, and a condition of the mind bordering on idiocy.

### CÆSAREAN SECTION.

CASE IV.—On Christmas day I performed Cæsarean section on a case of Dr. Wenzel's, in which two children previously born were lost, the first from delay, the second from perforation. We performed the modified Säger operation. We removed the child first and then applied the constrictor. The incision touched the edge of the placenta, and two spouting sinuses had to be controlled by pressure forceps. When the constrictor was removed there was no further hemorrhage. The hemorrhage was very moderate, indeed. The child weighed ten and a half pounds at birth, and as you see—child presented—he is a lively fellow. The mother is doing exceedingly well; both visceral and abdominal wounds have healed by primary union.

Let me call your attention to two things in connection with this case: first quickly deliver the child, and then apply the constrictor, and see that the uterus is completely emptied of placental tissue and coagula. In this case, after we believed the uterus perfectly clean, we found pieces of membrane firmly adherent to the interior of the uterus. When the child is packed down into the pelvis it is very difficult to apply the elastic constrictor, and valuable time may be lost; while if the foetus is removed first, there is ample room to do the work quickly and properly.

### OBSTINATE INFRA-ORBITAL NEURALGIA.

CASE V.—This man has been a great sufferer from infra-orbital neuralgia, and all efforts at relief have failed. To-day we shall resect the infra-orbital nerve. [The nerve was exposed by opening the infra-orbital canal with chisel and hammer, according to Hirsley's method, the nerve followed as far as possible, when it was seized and extracted as advised by Thiersch.]

Reflecting the periosteum and opening the infra-orbital canal has, as you perceive, fully exposed the nerve in the orbit. A few millimetres farther down we shall be at our destination. Thiersch had a forceps made specially for this work,—to seize and extract the diseased nerve. I now seize the nerve, and by torsion and traction have succeeded in removing a piece two and a half inches long. In some instances I have been able to extract by this method small nerves by the roots,—some brain tissue adhering to the extracted piece.

We now pack this gutter-like wound with this strip of iodoform gauze, one inch wide, to secure drainage and to favor healing by granulation. Now we replace the periosteum and secure it by buried catgut sutures. The tissues are now replaced and sutured, and iodoform-boric-acid powder is sprinkled thickly over the wound. Iodoform dressings complete the operation. When the wound is healed there will be a little depressed scar at the site of the infra-orbital foramen.

The patient attributed his whole trouble to catching cold two years ago, which caused a tender spot at the outlet of the infra-orbital nerve. The resected nerve showed well-marked evidences of chronic inflammation of the neurilemma.



## INTESTINAL PERFORATION DUE TO TYPHOID FEVER..

CASE VI.—This boy, aged fourteen years, was brought to the hospital a week ago in a moribund condition said to be due to typhoid fever. He had been sick for five weeks. The enormous dilatation of the abdomen and the intense pain led us to look for obstruction or perforation of the bowels. He was prepared for laparotomy by a hypodermic of one-eighth of a grain of morphine with one-fiftieth of a grain of atropine, and alcoholic stimulants per rectum.

An incision was made over the ileo-cæcal region, opening the abdominal cavity, and letting out a mass of liquid fecal matter,—at least half a gallon,—and a large quantity of gas.

There was no evidence of a free tympanitis, the liver dulness was normal in outline and location. Limitation of the peritonitis had taken place in a portion of the abdominal cavity, by forming new walls of the intestinal coils and masses of fibrin. This cavity was washed out, cleansed of gas and liquid feces, but no perforation was found. We gently inflated the bowels to the cæcum with hydrogen gas; but did not wish to endanger the intact peritoneal cavity; the perforation might be in the process of healing, or might be securely closed by gluing adhesion to some other intestinal loop or other organ by plastic exudation. Hence we ceased inflating, and instead thoroughly cleansed the cavity by flushing with Thiersch's solution to remove the causes of infection, and introduced two large drainage-tubes, and awaited the result. The boy has gained in strength. The exposed intestinal coils, covered with a thin layer of lymph, showed plainly circumscribed patches of inflammation resembling the site of typhoid ulcers. This did not add much to the gravity of the situation, because the sound peritoneal cavity is fenced off by this living plastic wall. This is our third case of laparotomy for perforation of typhoid ulcer in this hospital.

The first case was an acute perforation, secured by Lembert's suture. Death followed shortly after the operation.

The second case was like this one. Perforation had taken place at least a week before, giving ample time for absorption of typhoid matter. All these cases have sudden severe pain, weak pulse, collapse, shock; death usually follows in twelve, twenty-four, or thirty-six hours from septic peritonitis,—a septic peritonitis grafted on a typhoid infection. In the second case a large suppurating cavity communicated with a perforated ulcer. Vital reaction was insufficient to bridge over the chasm, and death followed in a few days.

In the present case our hope improves with the improvement in the heart's action; reaction is taking place, and recovery is possible, although some little fecal matter still escapes. The bowel is pervious, however, permitting passages of fecal matter *per vias naturales*. You see the fecal movements are assuming a more natural color. Repeated irrigation is necessary and is carefully carried out. The intestine is kept back in the abdominal cavity by iodoform gauze pads.

Meddlesome surgery is bad surgery in these cases. To disturb the plastic agglutination in search for the perforation at this stage would be rash and attended by great risks. Heretofore these cases have been allowed to die without an attempt at direct treatment.

In recent cases the perforation should be sought for and closed by suturing; but in cases where several days have elapsed since the perforation has occurred and a fibrino-plastic peritonitis has limited the infection, it is better to open the abdomen freely, flush with Thiersch's solution repeatedly, and allow the wound to remain open. If the patient survives and the perforation does not close spontaneously, an operation can be performed later for the cure of the intestinal fistula.

## MYELITIS IN A CASE OF INCIPIENT POSTERIOR SPINAL SCLEROSIS.

CLINICAL LECTURE DELIVERED AT THE ARAPAHOE COUNTY HOSPITAL.

BY J. T. ESKRIDGE, M.D.,

Neurologist to the Arapahoe County, St. Luke's, and Deaconess' Hospitals, Denver, Colorado.

GENTLEMEN,—The case of tumor of the brain we studied last Saturday is now taking three hundred and forty-five grains of potassium iodide daily with one-sixteenth of bichloride of mercury three times daily, and, in addition, inunctions of blue ointment are thoroughly rubbed in night and morning. The paralysis is somewhat less, his headache has almost entirely disappeared, but as yet his vision has not improved.

The case to which I wish to call your attention to-day is one of partial paraplegia coming on suddenly in a man suffering from chronic degeneration of certain columns of the spinal cord. The history is as follows: G. R., aged forty, single, male, hotel-keeper, in Colorado five years, was admitted to the hospital October 30, 1891, complaining of difficulty in walking. He knows nothing of his grandparents. His father and mother are healthy. One brother died of consumption, one of some form of cerebral inflammation, and one sister was choreic in childhood. He himself always enjoyed good health until about ten years ago, when he contracted syphilis, which was followed by secondary symptoms. Three years ago he complained of slight numb sensations in the left side of the face, in the legs, and in the ulnar side of the arms. The legs were occasionally the seat of darting pains. These pains were always worse after taking a cold. He has been addicted to immoderate use of alcohol. Several years ago he was a teacher of athletic sports, and performed feats that required extraordinary muscular exertion. At that time he was struck by a man falling on him and paralyzing the left arm for a few hours. No further symptoms of this have been manifested. Four or five years ago he was engaged in a walking-match for ninety-six hours. Three years ago his weight was two hundred and twenty pounds, but about that time he began to lose flesh, and at present his weight is one hundred and seventy pounds. With the exception of occasional shooting pains in the legs, temporary numb sensations in various portions of the body, and some difficulty in walking, especially in the dark, he seems to have enjoyed fair health until the 17th of October, about three weeks before his admission to the hospital, when on the afternoon of that day, with no apparent immediate cause, he found himself unable to move his right leg properly. Soon after the left leg became similarly affected. The disturbance in motion was attended in the beginning with numb sensations in the feet



and legs and inability to pass water. Since then he has had more or less pain of a shooting character limited to the legs. From the beginning of the disease until the present time he has experienced great difficulty in evacuating the bladder, and the bowels have been obstinately constipated. There has been no incontinence of urine or fæces, but it is probable from the vesical irritation from which he at present suffers that he has been from the first of his present illness unable entirely to evacuate his bladder. He has been kept in bed most of the time, but is able to walk if he gets up.

*Status præsens.*—His legs although not large are quite muscular. His gait is decidedly unsteady, and he is unable to stand with his eyes closed, so that there is considerable ataxia in the lower extremities. When he walks the right foot drags, but he can raise the left better than the right. There is decided foot-drop on the right side. When he is lying the movements of both legs are quite strong, both at the knees and hips. He is unable to flex the right foot dorsally, while plantar flexion is possible. Flexion and extension of the left foot are possible but feeble. All the paralysis we have here is limited principally to portions below the knees, and is absolute only on the right side. Knee-jerks, plantar and gluteal reflexes, and ankle-clonus absent; cremaster reflex present. The superficial reflexes (plantar and gluteal) that we find absent in this case have their centres in the second sacral and fourth lumbar segment of the cord respectively, while the absent deep reflexes, ankle-clonus, and knee-jerk have their centres in the fifth lumbar and first sacral, and in the third and fourth lumbar segments respectively. The cremaster reflex is the lowest reflex that we find present. It has its centre in the second lumbar segment of the cord. The lesion, then, in this case involves all the reflex centres of the cord below the second lumbar segment. All the reflexes of the spinal cord above the third lumbar segment are present and normal. Dyn., right, 220; left, 180. There is no paralysis or paresis in the arms or in the muscles of the face. Tongue is protruded in median line. Pupils are a little large and unequal, the left being larger than the right, and they do not contract readily to light. Accommodation good in both, but better in the right than in the left. Tactile sense: Abolished on the plantar surface of the right foot and all over the dorsal surface except in one or two small areas on the inner side of the foot. On the outer and posterior surface of the leg it is abolished or greatly lessened up to the knee. On the inner side of the leg it is nearly normal from ankle to knee. On the thigh it is present and normal except on the posterior surface, where it is either lessened or abolished up to the body. It is abolished around the anus and genital organs. Throughout the remainder of the right side tactile sense is normal. Left side: The sense of touch is abolished on plantar surface of foot, perverted or lessened on dorsal surface and on the outer and posterior portion of the leg nearly to the knee. On the inner side of the leg it is normal. On the thigh it is normal except on the posterior portion, where we find it about the same as on the corresponding portion of the other limb. It is lost in the anal region and over

the genital organs. Over the remainder of the left side it is normal in every respect. I wish to call your attention to the perverted character of the sensation in this patient's case. I found a few days ago, in testing the sense of touch over the distal surface of the feet and over certain portions of the legs below the knees, that the contact of substances was not recognized for several seconds after the parts had been touched. In one place the delayed sensation amounted to seventeen seconds. The impression made by a substance brought in contact with one leg was felt on an entirely different portion of the leg, and in one instance was spoken of as being in the opposite leg. In some forms of spinal trouble, especially in posterior spinal sclerosis, the perverted sensation found in this case is not infrequent. Temperature sense in this case is only slightly perverted, and that is on the soles of the feet, where it is more delayed than destroyed. A few days ago the temperature sense seemed to have been more changed than we find it to-day. It was then almost entirely destroyed on the soles of the feet and considerably perverted on the legs below the knees. Muscular sense is perverted in the feet, more on the right than on the left side. Pain sense is abolished on the soles of both feet, but it is present in all parts above the feet, but somewhat perverted. The muscles all respond to the faradic current, but a stronger current than normal is required to produce the slightest contraction. There are evidently, then, no reactions of degeneration in the muscles.

To sum up the case, we have a man who has been an athlete with a syphilitic history, muscles well developed, but he has been failing in health for a number of years, and during the last four or five years has been reduced from two hundred and twenty pounds to one hundred and seventy. Some three years ago he first began to notice shooting pains occasionally in the legs, and during this time there has been a slight unsteadiness in his gait at night. About one month ago while in his apparent usual health, he found that he was unable to evacuate his bladder. A few hours later he observed numb sensations in the right and left legs, the ankle and feet muscles becoming weak, but to a greater extent on the right than on the left side. Very little change has taken place in his condition from that time up to the present, with the exception that the bladder-trouble has become more annoying, a cystitis has developed, the urine is decidedly alkaline, and contains considerable pus and albumen, but no tube-casts have been found. He is still unable to evacuate the bladder. There has been no incontinence either of urine or fæces. In addition, we notice to-day that the reflex action of the pupils to light is lost, that the right pupil is larger than the left, but both respond on accommodation to near objects.

Now let us inquire into the lesion from which this man is suffering. It seems to me probable that we have two distinct affections in this case: one, chronic in character, extending over three or four years, and attended with shooting pains in the legs, some ataxia, and probably the Argyll-Robertson pupil, which we observe to-day; the other, subacute, coming on suddenly, attended with paresis of the bladder, total paralysis of the muscles of the



right foot and partial paralysis of the right ankle and leg and of the left foot and leg, with partial or complete anæsthesia and perversion of other sensations in the feet, in the legs below the knees, over the region of the distribution of the small sciatic nerve in the thighs and gluteal regions, around the anus, and over certain portions of the genital organs supplied by nerves from the sacral plexus. What is the character of this chronic trouble? The shooting pains in the legs, the Argyll-Robertson pupil, and the loss of knee-jerk are the early classical symptoms of posterior spinal sclerosis, so that I think we may infer that he has a chronic affection of the posterior columns of the cord.

In regard to the recent trouble, limited apparently to the lower portion of the cord or to the nerves of the sacral plexus, is it a multiple neuritis, an affection of the nerves of the lower portion of the spinal canal by pressure, a meningitis, or a myelitis? We have found, from the study of the cases of multiple neuritis which you have seen during the present term, that the paralysis and loss of sensation have been limited to the distal portions of the extremities, that they have affected the hands and feet, that they have been symmetrical and bilateral, and that the sphincters of the bladder and anus have been uninvolved. In the present instance, the asymmetry of the disease, the disturbance of sensation around the anus and genital organs, the affection of the vesical sphincter, and the fact that the hands and arms have escaped, enable us to exclude multiple neuritis.

In diseases of the cauda equina caused by pressure, especially tumors, pain is excruciating and the most prominent symptom. This being almost entirely absent in this case enables us to exclude an injury to the leash of nerves of the cauda.

Meningitis, to be localized as we find the affection in this case, would be likely to be attended with pain symptoms, and the pain would be very severe; so that we have left only subacute myelitis, limited to that portion of the cord below the second lumbar segment, to account for the symptoms developed in this case about one month ago. The objective sensory symptoms, which we find well marked, enable us to exclude cornual myelitis, in which sensory disturbances of this character are absent.

One of the earliest symptoms of myelitis limited to the lumbo-sacral portion of the cord is, frequently, inability to evacuate the bladder. The patient finds that one day he is unable to empty the bladder completely, and within twenty-four or forty-eight hours the muscles of one or both feet are weak, and numb sensations are felt in the feet and legs. The paralysis is rarely symmetrical, and if the lower portion of the lumbo-sacral portion of the cord alone is involved, only the muscles below the knee and those in the gluteal and anal regions, supplied by nerves coming from this portion of the cord, are affected. The sensory disturbances in cases of myelitis of the lower portion of the lumbo-sacral region are limited to the parts below the knees, more pronounced in the feet than in the legs, and more marked on the outer and posterior portions of the legs than on their inner surfaces,

to a narrow longitudinal surface on the middle of the posterior portions of the thighs, to the inferior gluteal regions, parts around the anus, over the perineum, and to the greater portion of the external genitalia,—in other words, to all parts supplied by nerves coming from the sacral region of the cord. By calling to mind the area over which the sensory disturbance is found in myelitis, limited to the extreme lower portion of the cord, we have an important aid in distinguishing this form of myelitis from multiple neuritis. In myelitis of a mild form, tactile sense is usually more affected than any other form of sensation, although we may find exceptions to this rule. In this case we find pain almost completely abolished over the area of total anæsthesia, while temperature sense is fairly good in the same area. I think we usually find that when pain sense is greatly perverted, temperature sense is seriously affected. In all cases of severe myelitis of the lumbar portion of the cord, trophic disturbance is manifested by a tendency to the formation of bed-sores wherever pressure occurs in the parts below the lesion, and cystitis and nephritis are to be feared. In our patient, who is suffering from a mild form of myelitis, although the greatest care has been used to prevent a bed-sore forming, yet we find that the parts over the sacrum are raw. We have also a troublesome cystitis to contend with.

The prognosis in this case, if the inflammation does not extend further, is fairly good so far as the subacute myelitis is concerned, but the chronic affection of the posterior columns of the cord promises much less satisfactory results. It is the first case that I have met with in which myelitis has occurred in a person suffering from posterior spinal sclerosis. I know of no reason why it should not occur and it may be a much more common complication than I am aware of, but I cannot at present call to mind any writer who has directed especial attention to it. I realize that it would be an easy matter in the majority of cases of acute myelitis to confound any special symptoms of a chronic trouble of the cord with those of the acute inflammation; but in the present instance, the history of shooting pains in the legs, the presence of the typical Argyll-Robertson pupil, with the feeling of insecurity in walking in the dark, extending over a period of three years, seem to point quite conclusively to posterior spinal sclerosis. After the lecture I will carefully examine the eye-grounds, the acuity of vision in different fields, and the ability to recognize colors, in order to ascertain if further evidence of *tabes dorsalis* is present.

In the way of treatment, taking into consideration the man's history of syphilitic infection, we shall depend largely upon mercury and potassium iodide. On his first coming into the hospital he was given ten grains of potassium iodide thrice daily, and the dose has been increased one grain daily, and at the same time inunctions of blue ointment have been freely used. The potassium iodide will be increased to the point of toleration, and the gentle impression of mercury upon the system will be kept up. The resident physician draws the water with a catheter made as aseptic as possible every six hours, and the bladder is washed out with a solution of



boracic acid. Strict attention is paid to cleanliness, so as to prevent the formation of bed-sores, if possible. His position in bed is changed from time to time to relieve pressure, and I have enjoined great care on the part of the nurses to use every precaution possible to prevent the parts over the sacral region of the spine being irritated. He will be kept absolutely at rest for some time yet. His diet will be nutritious, non-stimulating, and easy of digestion. Electricity will not be applied to the paralyzed muscles for at least a month after all signs of inflammatory trouble have subsided. In myelitis affecting the lower portion of the cord I have used strychnine to great advantage. There is here little or no tendency to contractures of the muscles, and the tendency to paralysis and flaccidity of the muscles may be prevented to a certain extent by the administration of strychnine. I have never used it in the early stage of myelitis to the extent recommended by the late and lamented Dr. Jewell, of Chicago, but after the acute inflammatory stage is over, I am in the habit of employing it, provided the knee-jerks are absent and the muscles are flaccid.

NOTE.—An examination of the eyes showed the optic nerves to be in nearly a normal condition, with good vision, normal fields and color perception.

# REVIEW OF MEDICINE.

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## MEDICINE.

IN CHARGE OF JUDSON DALAND, M.D.,

Instructor in Clinical Medicine and Lecturer on Physical Diagnosis and Symptomatology in the University of Pennsylvania, and Assistant Visiting Physician to the University Hospital.

ASSISTED BY

JOSEPH P. TUNIS, M.D.,

Philadelphia.

**One-Hour Crisis in Pneumonia.**—In the *Lancet* of March 5, 1892, Dr. Samuel West calls attention to a case of pneumonia in a boy of nine years, where at the crisis of the disease the temperature fell from  $103^{\circ}$  to  $96\frac{2}{5}^{\circ}$  F. in the course of an hour. He regards this case as unique. The writer has examined a hundred cases with special reference to the length of time required for the crisis, and has found the average to be twelve hours, which would seem to prove that the crisis in pneumonia is not so abrupt as it appears. An excellent temperature chart accompanies the history of this interesting case.

**Scarlatina.**—In the *Times and Register* (Scarlatina number, Philadelphia, March 12, 1892, p. 265), Dr. W. R. D. Blackwood gives a brief account of what he has learned about this disease during an experience of thirty years. In no disease is there more urgent demand for perfect isolation. The patient should occupy a room at the top of the house; the nurse kept away from the rest of the family, all unnecessary furniture removed from the sick-room; free ventilation secured, “even at the risk of giving the sick one ‘cold,’ so dreaded by most parents when you want the windows open day and night;” all bed-clothes, etc., should remain in the room until the case is terminated or should be boiled in the room before being used again by the patient. Recovery having been established, the furniture should be washed with turpentine, hot water, and soap, the paper and paint scraped off the walls, and the floor scrubbed with a strong solution of chlorine water.

Very little medication is required. Some cases get well without any. Children bear high temperature well. There is no use of interfering with this symptom of the disease (the writer believes) unless the temperature



keeps at 105° or more for over twenty-four consecutive hours. Then cold water is the best antipyretic. Alcohol, bay-rum, or saleratus may be added to the water, plentifully applied, and allowed to evaporate,—“the body being left fully exposed without covering of any sort, or as little as possible.” A good prescription for a febrifuge is :

R Liq. ammoniæ acetatis,  
Syr. limonis, āā q.s. ℥ iij.—M.  
Sig.—Teaspoonful every three hours or less.

A few drops of the tincture of belladonna or fluid extract of jaborandi may be added as occasion requires.

If the fever is very intense at the onset, tinc. aconiti rad. may be given, but should be carefully watched. The great danger is exhaustion and not complications. Sherry, wine-whey, or Florida orange-wine is useful. For albuminuria hot stupes to the loins together with ten drops of tinc. ferri chlor. and spts. æther. nit. every three hours for a child of three years. Dr. Blackwood has found electricity more useful than diuretics in anasarca. Small doses of Basham's mixture should be also administered for this complication. The disease, although a severe one, does not need much medication. Heroic treatment is demanded only occasionally. In defervescence the writer prefers bacon or ham-rind to ointments. The results of his treatment have been especially favorable.

**Hereditary Chorea.**—In the *Medical Record*, New York, March 12, 1892, Dr. Wharton Sinkler's elaborate article on this disease appears, with a report of three additional cases and details of an autopsy. Having gone over the literature of the subject carefully and detailed his own cases, the writer concludes :

1. Hereditary chorea, while it resembles in many respects Sydenham's chorea, differs in so many of its features that it is essentially a distinct affection.
2. The disease may manifest itself at or before puberty.
3. It is not an invariable rule that if the disease fails to appear in one branch of the family the descendants of that branch will escape the disease.
4. Voluntary efforts tend rather to aggravate than to modify the choreic movements.
5. Chorea among the adult insane is a different affection from hereditary chorea with insanity.
6. The evidence we have indicates that the pathology of the disease is a degeneration of imperfectly-developed cells in the motor tract or in the cerebral cortex and in the spinal cord, which is confirmed by the occurrence of this disease in children at an early age, among the cases recorded.

A complete bibliography of twenty-nine references accompanies this valuable paper.

**An Aggravated Case of Chorea.**—In the *Medical News* (Philadelphia, March 12, 1892, p. 296) Dr. George A. Himmelsbach reports a Ger-

man girl, aged eighteen, who was admitted to the Buffalo General Hospital during a severe attack of chorea. Six years previous, at the establishment of menstruation, she had had a similar attack, which was followed by monoplegia. One sister, the seventh child of the family, at the age of ten, had had such an attack, which ended fatally, the mother said. The spasms in this case had lasted four days before admission to the ward. They were so severe that deglutition was possible only when the nourishment was given in liquid form, a spoonful at a time. At the end of five days food could not be tolerated either by the mouth or by the rectum, and during this long period she had not had more than six hours' sleep. Constant motion had chafed her shoulders, elbows, nates, heels, etc., so badly as to cause capillary oozing. A liberal use of bromides, chloral, and anti-pyrim met with no success. Hydrobromate of hyosine (one-fiftieth grain) produced a short period of quiet. Sulphonal in twenty-grain doses produced no effect. Finally, the sulphate of morphia (one-quarter grain) was given hypodermically. This was followed by the longest rest she had had. Improvement in her condition commenced at once. Fowler's solution was given to the limit of tolerance, and she made a complete recovery, although paralysis of one leg delayed convalescence.

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## THERAPEUTICS.

IN CHARGE OF ALEXANDER D. BLACKADER, B.A., M.D.,  
Professor of Therapeutics, McGill University, Montreal, Canada.

**Treatment of Gall-Stones by Olive Oil.**—In a very interesting article in the *British Medical Journal* (January 30, 1892), Dr. Goodhart refers to the now almost trite subject of the *treatment of gall-stones by olive oil*. He first alludes to the influence of mental worry in the production of gall-stones, and says that it has not been his experience to find that sedentary occupation, obesity, or high living has any special influence on their formation. As to their treatment by olive oil, he observes that it seems reasonable that the fatty acids formed during its administration may keep the cholesterin in solution, and possibly may also redissolve it after its precipitation. He has, therefore, recommended its use frequently, but claims for his cases only a probability in favor of the value of its administration. He adds, "Some two or three years ago I advocated the use of *pilocarpine* as a sometimes very successful means of *allaying the intolerable itching of chronic jaundice*. Since then I have tried it again several times, and have recommended it to others, but although it is not always successful, I think it is certainly one of the most valuable means we have of controlling itchings of this sort. It may be given either by the mouth or by hypodermic injection, but it is more successful in the latter form."



On the Use of Oxygen Gas, with or without the Additional Exhibition of Strychnine, in Diseases of the Respiratory Organs.—During the past few weeks several articles have appeared in the *British Medical Journal* emphasizing the value of oxygen in those extreme cases where the breathing surface of the lung is much diminished, and the circulation is carried on with difficulty, as evidenced by marked cyanosis. Dr. J. Lauder Brunton and Dr. Prickett (*British Medical Journal*, January 23) report a case of pneumonia, where the patient was unconscious, livid, and almost moribund; but, after the inhalation of oxygen gas and the hypodermic injection of strychnine, recovered his consciousness and his normal color, and expressed himself as feeling comfortable and well. Twenty-four hours afterwards, however, breathing again became embarrassed, and, notwithstanding a somewhat freer use of oxygen, he died in a few hours. Another writer (January 30), recording a similar effect from it in a case of bronchitis, which was *in articulo mortis*, refers to its possible service in prolonging life and consciousness sufficiently to enable legal documents to be signed. Dr. Skerritt (*British Medical Journal*, February 6) says, "I have never seen such an extraordinary effect upon cyanosis produced by any other means, and for the future, in any case of acute respiratory affection threatening to prove fatal, I shall not consider that everything practicable has been done unless a fair trial has been given to oxygen."

On the Cure of Tetanus by Tetanus Antitoxin.—In the *Centralblatt für Bakteriologie und Parasitenkunde*, Bd. x., No. 24, appears a paper by Dr. Rudolf Schwarz, assistant in the Surgical Clinic at Padua, on the treatment of traumatic tetanus, by means of injections of the tetanus antitoxin of Tizzoni and Cattani. These experimenters have succeeded in obtaining a material from the blood-serum of dogs which previously had been artificially rendered immune to the disease (how this immunity is conferred is not stated in the papers at our command). This *antitoxin*, which is obtainable in a solid state, is dissolved in sterilized water, and injected with a sterilized Pravaz syringe, with all antiseptic precautions. It gives rise to a slight burning pain and produces a free perspiration and a distinct fall in temperature. From one to six or eight injections are apparently necessary. In the case which he reports, marked improvement appeared on the second day after the injections were begun, and by the fifth day all marked symptoms of tetanus had passed away. The patient was detained in the hospital for another week, when he left absolutely well. Since then other cases of cure by the same material have been reported by Pacini (*Rif. Med.*, January 7, 1892) and by Finotti, assistant to Professor Nicoladoni, Innsbruck Surgical Clinic.

Remarks on the Toxic Action of Impure Chloroform.—Dr. Du Bois Reymond (*British Medical Journal*, January 30, 1892) gives us the result of a series of experiments made with a view of ascertaining what

influence the impurities that frequently exist in chloroform had on its toxic action. Chloroform of superior though not special quality, but pure according to the German Pharmacopœia, was used, and following Professor Pictet's process, was subjected to intense cold, and thereby caused to partially crystallize. The liquor having been drawn off, the crystals were allowed to liquefy and gave pure chloroform, while the impurities were necessarily contained in the mother liquor. To insure as absolute purity as possible the process was repeated, and a comparison was then made between the physiological action of this absolutely pure chloroform, and that of the remaining liquor which contained the impurities. The results of a number of experiments were as follows:

1. No difference was found in the shape of the pulse-waves, nor in the frequency of respiration; the former being equally affected by both specimens, the latter varying freely.

2. The pulse-rate, compared in nineteen cases, is higher at the close of the experiments with the residue, or impure mother-liquor, than at the close of those with pure chloroform.

3. At the moment that respiration stops, the blood pressure, in by far the greater number of the experiments, is higher after inhalation of pure chloroform than after inhalation of the impure residue.

4. The impure residue causes stoppage much more quickly than the absolutely pure chloroform.

From the above experiments it appears to be proved that any impurities in chloroform render its use more dangerous, and that only the best procurable should ever be employed.

**Treatment of Typhoid Fever by Chlorine.**—In a paper by D. Boyd (*Practitioner*, February, 1892) on recent modification of our views on enteric fever and its treatment, the author says, "The medicinal treatment of typhoid by antiseptics has lately received that attention which our more perfect knowledge of its bacteriological origin would demand. I do not profess to believe that this method will abort a case of typhoid once the characteristic fever has begun, but I do assert that it will prevent in the majority of cases the septicæmic phenomena, for it is nothing but septicæmia that we have to deal with after the second week of the fever is passed. The typhoid bacillus has by this time done its work so far as the intestinal glands are concerned, and, hereafter, we have only saprophytic bacteria and their effects to deal with. In seeking for a suitable antiseptic we must choose one which will exercise its effects in the intestinal canal, and not in the stomach; one whose action must be thorough, disinfecting not alone the contents of the bowel, but permeating the intestinal wall as well, where septic micrococci may have already established themselves, or may even have entered the blood. To fulfil these conditions, the form of antiseptic must in my opinion be a gaseous one. We know how readily the intestines absorb gases and pass them into the blood. The antiseptic I am in the



habit of using is chlorine in an alkaline solution, as in this form it mingles best with the contents of the intestines, which in enteric fever exhibit a strongly alkaline reaction. This treatment is not new. Murchison administered it in an acid solution, which in my experience is not so satisfactory. That this method of treatment produces a fall in temperature, and makes the type of the disease milder, there can be no doubt, and in over a fourth of the cases, when begun early, it brings the febrile process to an end about the fourteenth or sixteenth day."

Dr. J. Burney Yeo, in a recent brochure ("The Treatment of Typhoid Fever Especially by Antiseptic Remedies," London, Cassell & Co., 1891), speaks very highly of the value of free chlorine in enteric fever,—a remedy recommended long since by Sir Thomas Watson, and more recently by Murchison. Dr. Yeo recommends the liquor chlori (B. P.) in twenty-minim doses along with some mineral acid. The solution, freshly made by means of potassic chlorate and hydrochloric acid, and slightly sweetened, is pleasanter to take than the officinal liquor chlori.

Conditions under which Cure in Consumption is Possible.—In a recent address before the Medical Society of London, Dr. J. Burney Yeo emphasizes *the conditions under which a cure in consumption is possible*, and protests against testing our new remedies in cases in which the conditions for cure no longer exist. The following facts are emphasized: The importance of an early recognition of the disease before the tuberculosis has developed into phthisis. This state may be recognized to the extent of probability, not to the extent of certainty. Certainty is reached only when the bacillus can be detected in the expectoration, and the bacillus cannot be detected until there is destructive ulceration of the lung and a small cavity formed communicating with a bronchial tube; in short, not until the phthisical process is somewhat advanced. The early occurrence of hæmoptysis is regarded as favorable, inasmuch as it impressively calls attention to this early stage. Those cases are also regarded as more hopeful in which there is a natural tendency in the evolution of the tubercle to fibrous change, or in which there is an absence of tissue-sensitiveness, or irritability, evidenced by the tendency to acute inflammatory reaction to the bacillary infection. Another favoring condition is the absence of marked hereditary predisposition, and the possession of a sound, vigorous constitution before the accidental infection. Lastly, we must have a sustained functional activity of the organs of digestion and assimilation. The phthisical patient who cannot digest and assimilate nourishment is in great peril.

Among the therapeutic conditions necessary or favorable to the cure of phthisis are: 1. The administration of food in suitable quantity, and in such forms and methods as shall insure its digestion and assimilation. 2. The possibility of a life much in the open air, either in the country or on the sea, where there is much sunshine, and where the air is dry and pure. 3. A continuous and strict attention to minute details of daily life

and hygiene. A therapeutic agent, universally esteemed in promoting curative changes in tuberculous deposits in the early stage, is counter-irritation, repeated and continuous. Furthermore, he says of antiseptics given internally that he has seen none so uniformly beneficial as creosote or guaiacol. It has held its ground better than any other antiseptic agent that has been applied to the treatment of phthisis, and has steadily gained in favor.

**Guaiacol in Tuberculosis.**—In reference to guaiacol a monograph has appeared recently by Dr. Max Schüllen, who began to use it in experiments on animals as long ago as 1878, and on his patients since 1880. He has noted the most favorable results from the treatment in pulmonary and in the so-called surgical tuberculosis. The author states that, according to the latest investigations, a considerable anti-bacillary action is assured with guaiacol both in the reagent glass and in trial animals. Most of his cases were of surgical tuberculosis, but in many of them there was also disease of the apex, in which marked improvement took place. Since writing the book the author has had opportunity to note the most favorable results in a large number of new patients. In pulmonary tuberculosis he gives children two or three drops, adults from three to five drops, of pure guaiacol four times daily in milk, bouillon, wine, etc. Although of somewhat disagreeable odor and taste, it seldom disturbs the stomach, and is readily borne by all patients. Dr. Schüllen has abandoned its administration in pill form, or in capsule, as unsuitable and less practical. Where necessary, he orders for his patients other drugs suitable to the symptoms, but never intermits the use of guaiacol. Guaiacol may also be administered as a weak inhalation. The treatment requires steady continuance in the use of the remedy for several months after the disappearance of the tubercle-bacilli and of the local symptoms of the disease.

In surgical tuberculosis the author carries out the same treatment with guaiacol, and considers it absolutely necessary, even where surgical interference is attempted, owing to the frequency with which these symptoms develop into tuberculosis of the lungs and other organs.

In the *Berliner klinische Wochenschrift*, January 18, 1892, Holscher and Seifert state that the action of guaiacol in phthisis is principally due to its combination in the blood with the products of the growth of the bacilli, by which combination these products are rendered harmless and their oxidation is assisted, the guaiacol being eliminated as a salt of ethylsulphuric acid. As it is the products of the bacilli which cause the fever, sweating, disordered digestion, etc., it is evident that the general condition of the patient must be at once improved. There is but little evidence to prove that any drugs absorbed into the blood act upon micro-organisms; any possible action takes place only when they come directly into contact with them, as in the stomach or the bowel.



## NEUROLOGY.

IN CHARGE OF B. SACHS, M.D.,

Professor of Mental and Nervous Diseases in the New York Polyclinic; Neurologist to the Montefiore Home for Chronic Invalids; Consulting Neurologist to the Italian Home of New York City.

Ueber einige neuere Forschungen im Gebiete der Anatomie des Centralnervensystems. (On some New Investigations into the Anatomy of the Central Nervous System.) By Prof. W. Waldeyer. (Reprinted from the *Deutsch. Med. Wochenschrift*, 1891.)

Bericht über die Leistungen auf dem Gebiete der Anatomie des Centralnervensystems. (Report on the Researches made into the Anatomy of the Central Nervous System [during the year 1890].) By Dr. L. Edinger. (Reprinted from *Schmidt's Jahrbücher der gesammten Medicin*, vol. cxxxii. p. 95 *et seq.*)

It is, as a rule, an ungrateful task to review a review; but the articles mentioned above contain so much that is new that the attention of the neurologist and of the student of histology should be directed to these very exceptional reviews; both of them being written by men whose reputations rest upon former original investigations. The chief interest of these reviews centres in the wider publicity given through them to the very startling discoveries more recently made by Golgi, S. and P. Ramon y Cajal, and Kölliker. The present reviewer cannot hint at more than this. The Italian, the Spanish, and the German histologists, quite independently of one another, have succeeded in showing the relationship existing between the ganglion-cell and the nerve-fibre, and have proved the same relationship to exist between these new elements in the cortex, the medulla, and the spinal cord. Each nerve-cell has two sets of processes, an axis-cylinder process and a protoplasmic process; the latter ramifies very largely; the former was supposed to be a single process, but Golgi has proved that it too gives off lateral branches, and that by the union of these lateral branches of different kinds of cells a fine net-work of nerve-fibres is established throughout the entire nervous system; the nerve-processes of many cells enter into this net-work of fibres, while the axis-cylinder processes of the cells of Golgi's type first become the axis-cylinder of a medullated nerve-fibre; the latter are motor cells, the former sensory.

S. Ramon and Golgi have proved the existence of collateral fibres, which emanate from the posterior root-fibres, enter the gray substance of the cord, and end with a twig formation.

The articles of Waldeyer and Edinger contain much of great interest regarding the structure of the cerebellum, the termination of the olfactory nerves, the end-plates of nerve-filaments in the muscular tissue, and the structure of neuroglia tissue. A full account of the staining methods employed by Ramon y Cajal and Kölliker is given on page 15 of the reprint of Waldeyer's summary.

Schnitte durch das Centralnervensystem des Menschen. (Sections through the Central Nervous System of Man.) Von Dr. P. Kronthal, Assistant in Prof. Mendel's Laboratory, Berlin, 1892.

This atlas contains sixteen large, colored, photographic plates reproducing microscopic sections through the brain and cord of man. Plate XVII. represents the cerebellum of a monkey. Those who are acquainted with modern staining methods will appreciate the truthfulness of these plates. Every figure is carefully lettered and the explanation is given on the opposite page. Dalton's atlas comes nearest to this in faithfulness of reproduction; but Kronthal's atlas, treating of the *microscopic* structure, is far more serviceable at the present day. The *horizontal* and *sagittal* sections add greatly to the understanding of the cross sections found in so many manuals of the present day. The beginner in histology of the nervous system will find this atlas particularly serviceable. The more advanced student will regret that certain anatomical regions of special interest have not been represented more in detail. Thus, a more precise account of the oculo-motor nuclei, after the fashion of Westphal and Siemering, would have been quite in order; but possibly such detailed reproductions would have increased the bulk of the atlas beyond measure. The atlas is a delight to the eye.

What can be done in Cerebral Surgery? Remarks based chiefly upon Personal Experience in Twenty-three Cases. By Emory Lanphear, M.D., Ph.D., Kansas City. (Reprinted from the *American Journal of Surgery and Gynecology*, January, 1892.)

It is evident from the above title that we, neurologists and surgeons of the East, do not monopolize cerebral operations, but we are not of the opinion of our Western colleagues that "in proportion to our knowledge of localizing symptoms *not enough* skulls are opened" in appropriate diseases. The author claims that we can operate for: 1, meningeal hemorrhage; 2, cerebral hemorrhage; 3, tumors of bones, meninges, or brain; 4, cerebral abscess and thrombosis of lateral sinus; 5, cephalalgia; 6, epilepsy; 7, insanity; 8, tuberculosis; 9, microcephalus. We *can* operate for all these conditions, but it is questionable whether we should do so if the indication for operation is as stated under Nos. 2, 7, or 8. The history of the patient who was operated on for cerebral hemorrhage, and who made such improvement "as to actually shock" the author, should have been given a little more explicitly. The author is not strongly in favor of operations for tuberculosis and insanity. Buckhardt's idea of endeavoring to regulate the deranged brain by surgical methods has had a rather cold reception the world over. We must call the author's attention to the fact that the case of microcephalus on which he operated was not one of those which can be expected to be improved by a linear craniectomy, nor did Lannelongue suggest the operation for such cases. The author's case was an infantile cerebral palsy (traumatic); besides, the child was eleven years of age, and,



though lame, she went to school at seven years and *began to learn to read*. She had scarlet fever, otitis media, convulsions, and at the age of eight years lost her speech and developed a paresis of the left side. In this case the author could not have concluded that the idiocy was dependent upon microcephalus. The dissection revealed a cyst a little larger "than a pigeon's egg in the speech-convolutions, a half-inch below the surface, and encroaching upon the second frontal convolution." The reviewer wishes to insist on the point that Lannelongue's operation is advisable only in those cases in which the arrest of cerebral development is due, or probably due, to the small skull; but many a *small skull may contain a diseased brain*, and such a brain may be benefited by other operations, but surely not by linear craniectomy. The author's surgical methods are above criticism.

**Primary Hemorrhage of the Lateral Ventricle.** By C. L. Dana, M.D. (*Journal of Nervous and Mental Diseases*, January, 1892.)

Dr. Dana describes the rather interesting case of a man, aged sixty-one years, who was brought to a hospital in a semi-comatose condition; pupils somewhat contracted, but equal. Two days after admission increase of stupor; temperature rose to 103° F., coma, stertorous breathing, and death seven days after the attack. There was no paralysis of face or limbs at any time. At the autopsy hemorrhage was found filling the right ventricle, and extending slightly through the foramen of Monro into the third ventricle. The deeper parts of the ganglia were not injured. Dana thinks the stupor and mental sluggishness of the man were the chief characteristics of the case.

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## PEDIATRICS.

IN CHARGE OF F. FORCHHEIMER, M.D.,

Professor of Physiology and Clinical Diseases of Children, Medical College of Ohio, etc.

**Ueber die Uebertragung des Menschlichen Spulwurms (*Ascaris Lumbricoides*).** (On the Transmission of *Ascarides* in Man.) By Prof. Alvis Epstein. (*Jahrbuch für Kinderheilkunde*, xxxiii. 3, 1892.)

Epstein seems to have established the fact that direct infection with ova of *ascarides* is not only possible, but probably the only method by which infection occurs. While, heretofore, two ways were looked upon as probable,—one by various articles of food, meat, starches, etc., the other by the aid of heat, the embryos partly developed being transmitted to the human being,—the direct method seems to be the simpler and more plausible.

The author used for his experiments what he calls a culture of the eggs. This "culture" was obtained from a stool rich in ova, of which a small quantity was put into a glass vessel and then into a second one in which there was some earth, the latter being kept moist. After five months, the ova, so preserved, contained well-developed embryos, although some were

still in the stage of segmentation. Afterwards he found that development would take place much more rapidly under more favorable conditions,—higher temperature, more moisture, more air, and plenty of sunlight. The best material for culture is fecal matter. After a year had elapsed from the first starting-point of the culture, Epstein gave to three children a syrup containing ova from it; all of these contained living embryos. The quantity of eggs could not be determined. All proper precautions were taken with the patients; they only received food that had been baked or boiled; they were not allowed to leave the house, and, finally, their stools were examined for eggs. About three months after these children had been fed on the syrup with ascarides eggs, their stools were found full of ova, and then began the attempts to get rid of the worms. Two of the children remained under constant observation, the third, having left the hospital, reported at regular intervals. In one child sixteen female and six male worms, and in the other forty-one females and thirty-eight males, were driven away by means of santonin. No pathognomonic symptoms were observed, but Epstein says that it is easier to introduce ascarides into the human system than to get rid of them.

As a result of his observation, Epstein concludes that the female has full sexual development by the tenth or twelfth day, and at this time is from twenty to twenty-three centimetres long, the male having attained a length of only thirteen or fifteen centimetres. The conclusion is arrived at that only exceptionally does infection take place by food or drink, but that direct infection takes place from the ground or floors, and prophylactic measures must be directed to the cleanliness of these or the destruction of the eggs in the fæces.

**Infectious Catarrhal Pneumonia of Intestinal Origin.** By Sevestre. (*Revue Mensuelle des Maladies de l'Enfance*, March, 1892.)

At the session of the Société Médicale des Hôpitaux, January 22, 1892, M. Sevestre made the following report: It is now five years since I called your attention to cases of broncho-pneumonia which I believed it possible to connect with infection originating in the intestine, and I then formulated the following conclusions:

1. In children from one to two years of age (and probably at other ages), improperly fed, decomposition of intestinal contents may take place, from which there may develop a fetid diarrhœa and an infectious enteritis.

2. Following this, general infection, pulmonary congestion, and broncho-pneumonia may be produced.

3. Disinfectants are the best means to stop this diarrhœa and to prevent the possible complications.

M. Lesage, at the suggestion of M. Sevestre, made bacteriological examinations, which, as he claims, show that the pulmonary lesions were due to the enteritis of which they were complications. They depend entirely upon the virulent bacillus coli (bacillus coli virulentus), which has



invaded the lungs and developed them. In five cases pulmonary lesions and hypertrophy of the spleen were noticed. In one case a simple, intense, and general pulmonary congestion was observed: here the bacillus coli was also found. In four cases catarrhal pneumonias, one with suppuration, were originated by the same bacillus. The investigations, it is claimed, also show that this bacillus is found in the air of the wards in which children with infectious entero-colitis are placed, that these bacilli are so abundant that, even in the short time required to expose sterilized milk to the air before giving it, a pure culture is formed which even infects other children. The suggestion is finally made that all children with infectious entero-colitis be isolated.

It may not be out of the way to remark that M. Lesage may be mistaken, and that his conclusions may be a little hasty. At all events, further publications and, above all, verifications are required before we can accept the above. Nothing could be more satisfactory than the explanation offered, but some of us have not forgotten some equally startling statements made by M. Lesage which, unfortunately, were never verified by other observers.

**Behandlung der Chorea St. Viti mit Exalgin.** (Treatment of Chorea with Exalgin.) By Dr. Hugo Löwenthal, 1. Assistent der Poliklinik, Berlin. (*Berliner klinische Wochenschrift*, February 1, 1892.)

At the suggestion of Dujardin-Beaumetz that spasmodic conditions in general could be affected beneficially by exalgin, the author concluded to try it in chorea. Five patients, aged from three to eighteen years, were treated, and the dose was two-tenths of a grain from three to five times daily, with the exception of the three-year-old patient, who received only one-tenth grain three times daily. In three cases the chorea was due to rheumatism, in four it was imitative, in nine it was due to fear or fright, in two there was an hereditary neuropathic tendency, in two others fright and heredity, and in the remainder no etiological factor could be discovered. In general, the results were satisfactory; the duration of treatment varied from eight days to four months. The earlier the patients came under treatment the quicker the beneficial results (eight days). The remedy produced unpleasant symptoms in some cases, which, however, disappeared as soon as the medicine was stopped, and when again administered it was continued without discomfort. In three cases the exalgin seemed to produce jaundice. The author does not claim any specific action for exalgin, but states that, in the majority of cases, its administration was followed by good results.

**A Case of Pericarditis in a Girl Seven Years of Age.** By Dr. W. Koerte. (*Berliner klinische Wochenschrift*, February 1, 1892.)

The patient was brought to the hospital in an unconscious state, having evidences of pericarditis, following osteomyelitis of both tibiæ. The latter were operated upon, and the cause of the osteomyelitis was found in the staphylococcus aureus. Notwithstanding this operation,

the pericarditis continued, and nine days after admission into the hospital the condition of the pericardiac cavity became so critical that operative interference was decided upon. A small quantity of pus was withdrawn with a hypodermic syringe, which contained staphylococci, streptococci, and bacilli; the latter, it was claimed, were due to a mercurial stomatitis and necrosis of the jaw. The pericardiac cavity was opened, a piece of the fifth rib was resected, and about five hundred cubic centimetres of pus were removed. The heart could be seen at work, undisturbed by touching it, or by wiping off from its surface small collections of pus with a one-half per cent. solution of lysol. Many interesting physiological observations were made, which, although confirming some of our previous views, it is hoped will be published *in extenso*. The pericardiac cavity continued to secrete large quantities of fluid, and on the twelfth day the child died of heart weakness. Post-mortem examination revealed collections of pus in the myocardium, in some places amounting to fistula, communicating with the pericardiac cavity, and in the papillary muscles of the mitral valve. There were evidences of pleuritis upon both sides, and both kidneys had miliary abscesses. In all the diagnosis of pyæmia could be made, collections of pus being primary in the medulla of the bone, and probably embolic in the kidneys and myocardium. From the myocardium either infection of the pericardium or rupture into the cavity took place.

As Koerte says, this case was hardly one in which a fair estimate could be made of the practicability of opening the pericardiac cavity, as the patient died of the many complications due to the primary disease. But the lessons to be drawn are many, not the least important one being that the heart is more tolerant of external interference than we would be led to believe by the physiologists.

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## SURGERY.

IN CHARGE OF B. FARQUHAR CURTIS, M.D.,

Surgeon to St. Luke's Hospital and to the New York Cancer Hospital.

**Gastro-Enterostomy.**—Senn (*Medical Record*, 1891, ii. 557 and 589) reports thirteen cases of gastro-enterostomy, performed with his decalcified bone-plates, for carcinoma of the pylorus. Three cases died of shock, one of intestinal obstruction, one of perforating peritonitis, and in four others, which recovered from the immediate effects of the operation, death ensued in from five to eighteen days, from marasmus, pneumonia, and hemorrhage from an ulcerating growth. Four cases were benefited by the operation and lived three, four, four, and twenty months after it. The case of peritonitis was due to the use of dry bone-plates, which caused gangrene by pressure by absorbing fluid and growing thicker. In another case a similar error resulted in the sloughing out of the plates and their ejection by



vomiting two days after the operation, but peritonitis did not follow, the adhesions being already firm, and the patient did well until a pneumonia developed and resulted in death on the twelfth day. Hence it is advisable to use only plates which are thoroughly moistened and not liable to swell. The death from intestinal obstruction was caused by the adhesion of the afferent and efferent loops of bowel close to the point of communication with the stomach, the spur thus formed acting as a valve and preventing any fluid from passing either from the afferent loop or from the stomach into the efferent loop. Senn employs a ring of fine silk interrupted sutures around the plates to render the apposition more secure, and also overcasts the edge of the wound in the stomach with a continuous catgut stitch to prevent eversion of the mucous membrane and hemorrhage,—alterations in technique which must render the use of the bone-plates almost as tedious as the usual suture methods. Unfortunately, there was no post-mortem examination of the cases which survived for any length of time, but the absence of vomiting would seem to indicate that there was no contraction of the new orifice except in the case living twenty months after the operation, and in that case Senn thinks that the neoplasm extended and involved the new pylorus.

**Intestinal Suture by a New Method.**—Kummer (*Archiv f. klin. Chirurgie*, xlii. 534) has been experimenting upon dogs with a new method of intestinal suture. This method consists in dissecting back a sleeve-like circular flap of the serous and muscular coats all around the bowel, for about one and one-half centimetres (half an inch), cutting off the projecting mucous and submucous coats at this level, sewing the edge of the latter to the corresponding layers of the other loop prepared in the same way, then doubling in the two redundant flaps or sleeves of serous and muscular tissue so that their serous surfaces are brought broadly in contact, and securing the latter with one or more series of Lembert-Czerny sutures. In this way serous apposition is obtained without rolling in the entire thickness of the edge of the bowel as in the ordinary method, and the projection of the inverted edges into the intestinal lumen and consequent danger of obstruction is avoided, for when the sero-muscular flaps are folded up against each other they stand outside around the line of suture like a ruff, instead of projecting inside of the bowel like a diaphragm.

**Operative Treatment of Enlarged Prostate.**—Keyes (*Medical Record*, 1891, ii. 525) reports eleven cases of prostatectomy, eight suprapubic and three perineal. He considers prostatectomy inadvisable so long as the patient is comfortable with the habitual use of the catheter, for the best statistics still give it a mortality of nearly fourteen per cent. On the other hand, he states that even desperate cases can sometimes be saved by it, although the rate of mortality is necessarily high in cases of that kind. He prefers the suprapubic route, as it renders thorough operation so much

easier, but thinks the perineal method may still be employed in the case of very feeble subjects. On account of the danger to the kidneys, he always uses chloroform for the anæsthetic, in spite of the fact that he was brought up to consider that drug much more dangerous (in other respects) than ether. For the same reason he also administers diuretin, believing that it assists the kidneys to bear the shock. He suggests the use of the bone-rongeur for cutting away very hard prostatic tissue, having met with some which could not be removed with the scissors. The retaining loops of silk which are secured in the bladder-wall in the beginning of the operation are not removed, but passed through the rectus muscle of the corresponding sides and carried outside of the skin around the body of the patient and tied together behind, so as to keep both the bladder and abdominal wounds widely open. Permanent irrigation with a hot boracic solution is employed in the after-treatment. If there is much hemorrhage, it can be controlled by hot water or iodoform-gauze packing. The amount of tissue removed does not seem to influence the mortality, but Keyes advises to remove only the bar which obstructs urination and prevents drainage of the bas-fond of the bladder, and also any very prominent parts of the posterior portion of the gland, leaving the anterior segment.

**Operations upon the Common Bile-Duct.**—Frank concludes (*Wien. klin. Woch.*, 1891, No. 51), that when gall-stones are found in the common duct, the treatment should be varied to suit the individual case, choosing one of the following methods: 1. Press the stone into the duodenum. 2. Crush the stone with the fingers, or with padded forceps, through the walls of the duct. 3. Open the gall-bladder and remove the stone by the cystic duct. 4. Cholecystenterostomy. 5. Making fistula between the duct and the duodenum. 6. Incise the duct and leave the wound open. 7. Incision and suture,—the ideal method. The reviewer would add to these the method adopted successfully by McBurney in one case,—namely, incision of the duodenum, dilatation of the duct (executed from the intestine), and removal of the stone, followed by suture of the bowel.

**Changes in the Gall-Bladder in Cholelithiasis.**—Janowski (*Beiträge z. patholog. Anatomie und z. allgem. Path.*, x. 449) describes very fully the changes which result from the presence of gall-stones in the bladder, consisting of degeneration and atrophy of the mucous membrane and its folds, hypertrophy of the muscular layer (with subsequent atrophy), and cicatricial changes of the connective-tissue layer. It is of interest to surgeons to learn that the yellow, thick, but not tenacious and not foul-smelling fluid often found in the bladder is really not purulent, although it frequently resembles pus. True pus is very rare and only found after some infection. In the cases just mentioned, examination of the bladder-wall showed no purulent infiltration and no bacteria; and the diagnosis of purulent cholecystitis should never be accepted without this thorough examination. This



report should encourage surgeons to greater freedom in the treatment of these cases, for while we knew already that the bile was well borne by the peritoneum (as lately shown by the case reported by Arbuthnot Lane, *Lancet*, May 16, 1891, in which bile was removed from the peritoneal cavity five weeks after an injury to the gall-bladder, without severe peritoneal symptoms), it could not be without misgivings that the surgeon discharged apparently purulent contents from the gall-bladder almost in contact with the peritoneum, until experience had demonstrated that his fears were unnecessary. The pathologist thus explains the clinical fact of the harmlessness of this secretion.

**Laparotomy for Rupture of the Intestine.**—Jahoda (*Wiener klin. Wochenschrift*, 1891, 837) reports two successful cases of laparotomy for rupture or laceration of the intestine, which deserve notice.

**CASE I.**—Male, forty-four years of age, injured by the end of a pole driven forcibly against the region of the umbilicus, lost consciousness for some minutes, then had great pain, soon followed by vomiting and hiccough. Absolute constipation ensued and the vomiting became feculent. There was slight tympanites, with dulness in the lower part of the abdomen, the liver dulness remained normal. Although the patient was very feeble (temperature 101.3° F.), exploratory laparotomy was performed eighty hours after the injury. About three litres of cloudy fluid with flakes of fibrin, distinctly fecal in odor, were found in the abdomen, the surface of the intestines was covered with lymph and congested, and a wound one and one-half centimetres in diameter was discovered on the free border of the (small?) intestine, its edges everted and adherent to the neighboring loops. Suture of the intestinal wound, irrigation, drainage. The operation lasted fifty minutes, and the shock was great, but recovery followed with some suppuration of the abdominal wound.

**CASE II.**—Woman, twenty-eight years old, kicked by the heel of a man's boot in the right side of the abdomen. She did not lose consciousness, but suffered intense pain. She soon succeeded, however, in going up four flights of stairs. Vomiting, increased pain, retention of urine, prostration, and absolute constipation followed. Twenty-five hours after the injury there was some abdominal distention, dulness in the lower abdomen, normal liver dulness, temperature 98° F., and laparotomy was performed. One and one-half litres of brown fluid, not feculent in odor, but containing cucumber-seeds, were emptied from the belly, and the peritoneum showed intense congestion and thick deposit of fibrin. A wound one centimetre in diameter was found on the free border of the small intestine, with everted edges, adherent to the neighboring loops. Suture, irrigation, drainage. Operation lasted ninety minutes. Speedy recovery.

**A New Method for Closing Intestinal Wounds.**—Chaput (*Gaz. des hôpitaux*, 1891, p. 1271) suggests a new method for closing wounds of the intestine, which is evidently an outgrowth of his former experiments, in which he succeeded in closing wounds of the bowel with pieces of iodoform gauze of several thicknesses stitched into the wound, the surrounding loops of bowel falling against the gauze and becoming adherent to the injured gut before its contents could penetrate the gauze, the latter being ultimately passed per anum. His new idea is to dispense with the gauze and to sew the adjacent parts of the bowel against the injured part. He bends the in-

testine upon itself a short distance from the injured point, and secures the surface of this uninjured limb of the loop against the injured part, with Lembert sutures which entirely surround the opening. Even if there are two wounds opposite each other, a double bending of the loop will afford the means to close both of them. If the mesenteric border is injured he passes threads through the mesentery and uses that to stop the gap, or else doubles the loop twice upon itself and sutures each of the outside limbs of the loop against one side of the mesentery and bowel at the point of injury. The method has been tried only upon animals, but in them no instances of intestinal obstruction occurred even when they were observed for some time after the operation. It would seem as if the danger of obstruction was very great, and renders doubtful a method which might prove useful in an emergency, although it could never suffice for ordinary work.

**A Method for the Resection of Irreducible Intussusception.**—Barker (*Lancet*, 1892, i. 79) describes a simple method of dealing with irreducible intussusceptions, by placing a ring of sutures around the neck, so as to secure the intussusciens to the intussusceptum, then incising the former, generally longitudinally, drawing out the intussusceptum through the incision, cutting it off just below the neck, placing a few sutures through the cut edges of the folds of the intussusceptum in the stump to control bleeding, replacing the stump in the sheath, and closing the incision in the latter with sutures. This method is an imitation of the cure of intussusception by sloughing of the invaginated bowel, and depends for its value upon the fact that the lumen of the gut is generally preserved at the point of strangulation, the obstruction being really caused by the œdema of the intussusceptum beyond, so that when the greater part of the latter is removed the passage of the contents of the bowel is no longer interfered with. Barker claims that the procedure requires much less time than resection in the ordinary way and suture. While granting the fact that obstruction is not apt to follow this method of dealing with the intussusception, one cannot but think of the possibility of further invagination of the bowel occurring at the point where the neck of the intussusceptum is left; and also of the probability of cicatricial constriction developing at the same point. For these reasons it would seem better practice to resect the intussusception and establish an artificial anus when the large intestine or lower ileum was involved (the fistula being closed later), but where the intussusception took place in the upper part of the small intestine there can be no doubt that Barker's suggestion would prove a most useful means of reducing the mortality, which is almost universal when the intestine is irreducible. Unfortunately, in the two cases operated upon by Barker the patients were so feeble that they died of shock.



## GENITO-URINARY SURGERY.

IN CHARGE OF WILLIAM K. OTIS, M.D.,  
New York.

On the Use of Salicylic Acid in the Treatment of Certain Forms of Cystitis. By Dr. John P. Bryson, St. Louis. (*Journal of Cutaneous and Genito-Urinary Diseases*, February, 1892.)

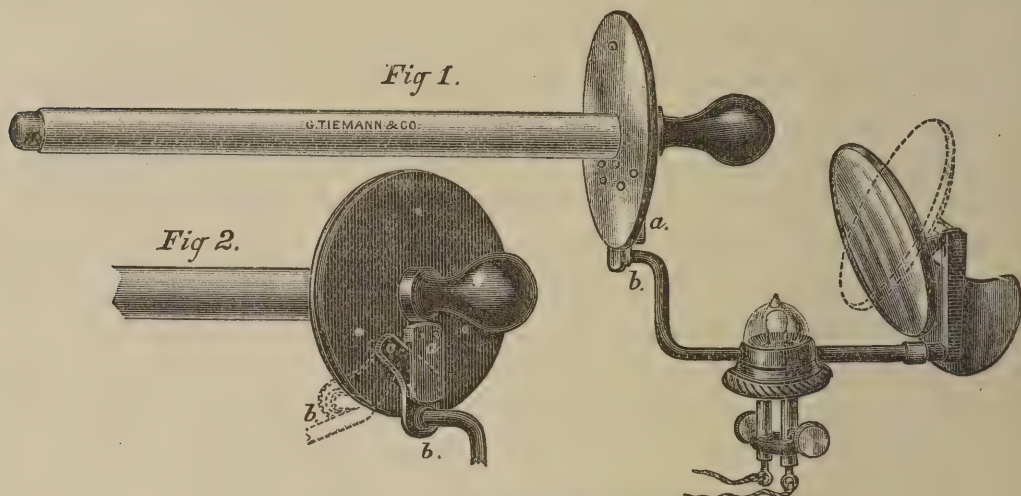
In the more chronic cases of cystitis where the mucous surface of the bladder is covered with a thick or a tenacious protection, made up of mucus and necrotic epithelium, Dr. Bryson finds that a one-sixteenth solution of salicylic acid is exceedingly valuable in cleansing the bladder, leaving the mucous surface in the most favorable condition for medication by more powerful and efficacious topical remedies. He has demonstrated through the cystoscope that the attempt to remove this tenacious coating by the mechanical action of the injected stream is an unsuccessful and likewise a more or less dangerous procedure. In acute cystitis with thin exudation, the use of salicylic acid is not necessary, and when there is ulceration with a disposition to bleed it is harmful. In tubercular disease where the bacilli and their ptomaines are already breaking down the tissues without giving opportunity for other covering to an ulcer than that afforded by coagulation necrosis, the salicylic acid is not only not needed, but is distinctly harmful.

Its use in old prostatics with sacculated bladders, into which numerous trabeculæ project, is open to two serious objections: First, for the cleansing of the pockets of the tenacious muco-pus it is inefficient; and, second, the projecting edges of the trabeculæ are unequally exposed to its action, so that frequent irrigations will so clear them of their protective coating, and will in addition so soften and loosen their epithelial coverings that they are apt to bleed. The solution of salicylic acid is also found to be of value in cleansing the urethra in cases where tenacious discharge is present.

A New Form of Electro-Urethroscope. By W. K. Otis, New York. (*Journal of Cutaneous and Genito-Urinary Diseases*, April, 1892.)

Although the present form of electric lamp, which alone renders the electro-urethroscope practicable, is distinctly the outcome of American ingenuity, there seems to have been no attempt made on the part of American surgeons to produce anything in the way of an electro-urethroscope of home manufacture. On the other side of the Atlantic, however, where the value of this comparatively new instrument seems to be better appreciated, there are several varieties, each having its own peculiar claim to superiority. Of these undoubtedly the one best suited for practical work is that of Leiter, of Vienna, but it is heavy, complicated in construction, and consequently expensive, repaired with difficulty in case of injury, and subject to a duty of thirty-five per cent.

The instrument described in this article has a weight but one-seventh of that of Leiter, it is of the simplest possible construction, and inexpensive. The illumination is fully as powerful as that of the larger instrument, and much more room is given for the introduction of instruments into the urethroscopic tube. Its weight is so small that, when desirable, it may remain on the tube steadied by the patient, thus allowing the operator to use both hands.



W. K. Otis's Electro-Urethroscope.

A glance at the illustration gives an explanation of the optical principles upon which it is based and also the method of attaching it to the urethroscopic tube. This latter is extremely simple and allows the instrument to be readily attached or detached while the tube remains *in situ*. By the substitution of a ring-sliding joint for the flat foot at the distal end of the instrument it is rendered equally applicable to the other forms of urethroscopic tubes, the one in the illustration being that of Dr. Hermann Klotz, which is the pattern preferred by the author.

**A New Treatment of Acute Gonorrhœa.** By C. E. Cotes, A.M., M.B. (*London Lancet*, February 27, 1892.)

The last of the numerous but usually ephemeral methods of aborting or at least rapidly curing acute gonorrhœa has come to us this time from England, and the claims of the author would certainly justify a careful and painstaking investigation of his plan. The patient is first made to micturate and remove the discharge from his urethra as far as possible. The endoscopic tube warmed and well oiled is then passed into the urethra, the patient lying on a couch. As a rule, the passage of the instrument gives rise to but slight pain, but occasionally in sensitive patients, or where inflammation is very acute, a ten per cent. solution of cocaine previously injected up the urethra will be found useful. The urethra is then thoroughly mopped with dry cotton wool fixed in a stylet and examined by the electric light. The exact limit of the inflammation can then be clearly seen. It is, as a rule, quite five inches from the meatus; it may be four inches even so early as the third day of the disease. It is important not to pass the endo-



scope needlessly far beyond the posterior limit of inflammation, which is usually sharply defined. The diseased membrane should now be carefully remopped with dry cotton wool so as to remove every vestige of secretion and have a perfectly clean surface. A mop of cotton wool on a stylet, and charged with a solution of silver nitrate (ten grains to the ounce of water) should then be passed down the endoscopic tube and thrust through its distal aperture. The tube and the mop are then withdrawn simultaneously. By this means the walls of the urethra contract upon the mop and are thoroughly moistened by the solution. For the two inches of the urethra near the meatus a fresh mop is used, so as completely to saturate this portion of the passage, in which the disease commences, and where also the inflammation is most intense. Pain is slight and lasts but a few minutes. The patient is to take a hot bath and to remain in bed, if possible, the next day. The diet is regulated as usual. A saline purgative with an alkaline or copaiba mixture internally, and the patient instructed carefully how to wash out the urethra with a mild injection, as Condyl's fluid, a drachm to the pint, using a syringe of a capacity of two drachms, concludes the treatment. The author has treated forty-two cases by this method, the average duration of which was a little less than twelve days, two of the cases, which were of but two days' standing, being cured in five days. It may at times be necessary to modify the strength of the solution, and occasionally a second application will be found to be beneficial.

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## ORTHOPÆDICS.

IN CHARGE OF REGINALD H. SAYRE, M.D.,

Assistant to the Chair of Orthopædic Surgery, Bellevue Hospital Medical College, New York.

**Congenital Dislocation of the Hip.**—The last suggestion that has been advanced for the cure of this most intractable deformity is that of Lannelongue, in a paper read by him before the Surgical Society of Paris, on December 23, 1891. In order to create a new rim to the acetabulum and thus form a barrier to the upward progress of the head of the femur, the author makes use of the irritative properties of chloride of zinc, injected into the periosteum. He presented to the society a little girl three years old, who had suffered from a unilateral congenital dislocation of the hip on the right side. On the 17th of November, the child being anæsthetized, and firm traction made on the limb to draw the head of the bone into the acetabulum, eight injections of two drops each of a ten-per-cent. solution of chloride of zinc were made in a semicircle along the surface of the ilium above where the head of the femur was held. There was no trouble following the operation, and in ten days a ring as firm as bone could be felt along the place where the injections had been made. On December 10, ten similar injections were made on and above this bony ring to strengthen and

enlarge it. At the time the patient was shown to the meeting a large, hard, painless ring could be felt above the head of the femur in the acetabular region, which held the femur in position and enabled the child to walk well. The author believed this firm band was the result of a condensing osteitis and that the cure would be permanent. The writer has tried this method in one case, but it is too soon yet to report the result.

**New Mode of applying Plaster of Paris.**—Dr. King, of Helena, Montana, has a description in the *Fortschritte der Krankenpflege* for January, 1892, of an apparatus for the application of plaster of Paris to the leg or thigh. It consists of a board about thirty inches long, to each end of which is hinged another board which can be fastened at right angles to the first or folded flat for transportation. In one of the end boards is cut a notch to hold the calf of the leg; a strip of cloth the width of the leg is tightly drawn from the top of one upright piece to the other, forming a shelf on which the leg rests. By means of adhesive strips on the sides of the leg, which are attached to a screw in the board below the foot, traction to any desired extent can be made on the leg, counter pressure being exerted by the bend of the knee where it passes over the other upright. Plaster-of-Paris bandages include the plaster strips and the cloth shelf as well as the leg. In an emergency an instrument may be improvised out of an ordinary box, by stretching a narrow bit of cloth from one end to the other and allowing the broken leg to rest on this, while traction is made by means of a bandage passed around the ankle.

**Does Lateral Curvature ever cause Pressure Myelitis?** was the question propounded by Dr. H. W. Berg at the February meeting of the Orthopædic Section of the New York Academy of Medicine. He gave the history of a girl eighteen years old, whose mother had died of phthisis, and whose sister had died of peritonitis while under treatment for lateral curvature. Five years ago patient had some trouble with right ear, rendering her deaf in it. The mouth and eyelid were drawn to the right side (Bell's palsy). Six months after, it was noticed lateral curvature was beginning, the right ribs projecting. A brace was applied. In eighteen months' time father noticed staggering in her gait and consulted a neurologist, who made a diagnosis of lateral sclerosis, and ordered brace removed. Another neurologist had called it hysteria, and hypnotized the patient without effect. When the patient consulted Dr. Berg she had spastic gait, exaggerated reflexes in legs and arms, and contraction of the flexor muscles. The right leg and left arm were mostly involved. He diagnosticated lateral spinal sclerosis, and held that there were two points of sclerosis corresponding to the two points of greatest convexity in the upper and lower curves. He concluded that the cord symptoms were secondary to pressure produced by the curvature, and held that the various pains and the nervous phenomena that are so often observed in children are due to pressure on the cord setting up a myelitis. The writer had seen the



case at one time in consultation with an eminent neurologist, and it seems to him that it is a mistake to regard these nervous phenomena as secondary to the lateral curvature, but to take them as going hand in hand. The history points to a lesion in the brain as well as the cord, and that this antedated the marked occurrence of lateral curvature, though possibly the latter existed long before the parents discovered it. The author has long noticed the prevalence of various nervous perversions in cases of lateral curvature, and has attributed both the nervous and bone symptoms to some deep-seated lesion at present unrecognized. Dr. Berg's suggestion that there may be a myelitis from pressure is, as far as he knows, novel, and may be found to be correct, and the suggestion deserves careful investigation. In the autopsies reported, the condition of the cord has never, so far as the writer knows, been mentioned. Exostoses on the external aspect of the vertebræ are of common occurrence, and possibly such may impinge on the central canal, though none are so described, and the author doubts the twisting of the canal to be sufficient of itself to produce pressure severe enough to cause myelitis.

**New Method of recording Cases of Lateral Curvature.**—At the same meeting Dr. Mary Putnam Jacobi showed a new method of recording diagrams of lateral curvature. A piece of lead tape, half an inch wide and jointed in the centre, with two hinges about an inch apart, is passed around the body and firmly pressed into all the inequalities of outline. It is then removed by opening the hinge, and then, having been folded together once more, placed on a slab of greased marble and the centre filled with liquid plaster of Paris. When this has set, the lead tape is removed and a plaster slab is left, which gives more or less accurately a section of the trunk at that part of the body around which the tape was passed. Sections of different parts of the body can thus be readily compared, and the differences in the oblique diameters easily noted.

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## OBSTETRICS AND GYNÆCOLOGY.

IN CHARGE OF J. M. KEATING, M.D.,

Colorado Springs, Colorado; Fellow of College of Physicians of Philadelphia; Formerly Consulting Physician for the Diseases of Women, St. Agnes's Hospital, Philadelphia; Consulting Surgeon to the Maternity Hospital; Gynæcologist to St. Joseph's Hospital; Visiting Obstetrician to the Philadelphia Hospital (Blockley), and Lecturer on the Diseases of Women and Children; Editor "Cyclopædia of the Diseases of Children," etc.

Küstner (*Deutsche Med. Wochenschr.*, No. 1, 1892), in reviewing one hundred and twenty-nine cases of laparotomy performed by him in the last three years and a half at Dorpat, discusses some of the indications for the operation. The operation itself he considers no longer a dangerous one, although its ultimate consequences may prove very distressing. Chief

among these are peritonitic adhesions. In spite of recent work on the subject we do not know definitely the cause of their development, for neither cauterization, ligatures, strong disinfectants, nor sepsis are necessarily followed by adhesions. As an example of the danger they may cause he mentions a case of intestinal torsion caused by such adhesions. The danger to life, however, is not great, and exploratory laparotomy is permissible, but only where the chances are that it will be the first step in the operation, which is to follow immediately. In four cases laparotomy was performed on account of peritoneal tuberculosis. In spite of the typical appearances in these cases, the nodules contained no bacilli, and inoculations into the peritoneum of rabbits were without result. Küstner operates rarely for the extirpation of diseased tubes and ovaries, as he believes that *time* in connection with baths, tampons, massage, and electricity will accomplish more than operative interference. He sometimes performs laparotomy for displacements of the uterus where the latter is firmly fixed by adhesions and other methods of treatment have failed to relieve the patient.

A. Martin and Mackenrodt publish their experience with electrotherapy in the treatment of myomata in the *Deutsche Medicinische Wochenschrift*, No. 2, 1892. Sixty-six cases were treated. In the first group (55.5 per cent.), for the most part with small tumors, the results were favorable in so far as hemorrhage and pain were lessened and the general condition was improved. On the other hand,—

1. There was no case in which the tumor disappeared ;
2. Nor was the size of the tumors diminished, beyond all doubt.
3. In twenty of the thirty-six cases, the menopause occurred during the treatment, with regressive changes in the tumors.
4. In twelve the improvement was not entirely permanent.
5. In 44.5 per cent. there was no improvement at all ; the condition of the patients grew worse, and three cases, 8.3 per cent., died during treatment.

On the ground of their experience and that of others, the authors reject the Apostoli treatment of myomata.

**The Prevention of Retroversion of the Uterus.**—By A. Lapthorsi Smith, M.D. (*Journal of Gynæcology*, September, 1891.)

The writer has been struck with the number of cases of retroversion with fixation and the great difficulties encountered in establishing a cure. He believes that all this suffering could be avoided if accoucheurs would adopt the following rules :

*First.* To instruct their patients not to be upon their backs more than a few minutes at a time, but to turn about freely from side to side, and to be occasionally on their faces.

*Second.* To give them full liberty to sit up when they wish to relieve their bladder or bowels, and while they are taking their meals.

*Third.* To take care not to allow the bladder to be distended during the



first few days; but to order the nurse to pass a catheter every eight hours at least.

*Fourth.* To abandon the use of the obstetric binder until involution is complete, and the patient is out of bed with the uterus subverted, when she can recover her figure, if she is foolish enough to consider it, with much less damage by tight lacing and forcing down the bowels *behind* the uterus than by squeezing down the bowels in *front* of a helplessly retroverted uterus.

*Fifth.* To order the very simplest case a daily douche of plain or medicated hot water, so that, if retroversion does occur, it may not be rendered hopelessly incurable by adhesions.

*Sixth.* To keep the bowels in an easily movable condition, so as to avoid forcing the uterus when retroverted still farther into the hollow of the sacrum.

All these remarks apply with still greater emphasis to cases of miscarriage.

On the Treatment of Fibroid Tumors of the Womb. By Dr. Engelmann, of Kreuznach. (*Edinburgh Medical Journal*, November, 1891.)

This paper is the result of the treatment of six hundred and eighty-nine cases since 1868. Of this number four hundred and nine of the cases are alone available for deductions, the remainder, by reason of too short a time under treatment or of too recent date, are valueless.

The tumors were classified under the headings "Very Large," reaching above the navel, "Medium," size of a child's head, and "Small;" not, as is usual, into *subserous*, *interparietal*, and *submucous*.

Further, it is important to distinguish between those which appear near the climacteric, or after forty, and those which develop sooner, and finally to ascertain the way the symptoms exhibit themselves and the effect of treatment upon them. As the author's arithmetic seems to us to be somewhat mixed, we omit his percentages.

The methods employed were (1) *baths* with the addition of concentrated saline water, (2) ergotin injections, and (3) electrolysis, the latter used after the methods of Apostoli. With the baths alone cessation of growth was noted in 53 per cent., in 23 per cent. there was a perceptible diminution, and in 18 per cent. there was complete recovery. Twenty-one cases were treated also by *electrolysis*; there was diminution in 33 per cent., cessation of growth in 43 per cent., and no improvement in 23 per cent.

Where hypodermatic injections of ergotin were used and in some the internal administration of ergotin as well, in 62 per cent. the general condition decidedly improved, 25 per cent. completely recovered, and the treatment had no effect in 13 per cent.

The author states, "of the numerous and in many instances very severe cases which have been sent here for treatment, so far as I know, in four cases only myomotomy, and in six cases castration, was necessary, while in

five enucleation of the descending tumor was required." In his summary of treatment the author alludes to the fact that small and lethargic tumors need little or no treatment except general hygienic measures and rest during menstruation.

The administration of one-half grain of ergotin, and the daily watching digestion, may be substituted, provided there be no menorrhagia. It would then be contra-indicated. Menstruation in cases of fibroid is apt to be extended to the fifty-fifth or fifty-six year.

In severe cases the energetic ergotin treatment is advisable, associated with the baths, which latter "must be strong and long-continued."

**Large Extra-Peritoneal Polycystic Ovarian Tumor, Completely Removed by Abdominal Section without Opening into the Peritoneal Cavity.** By J. H. Fergusson, M.D. (*Edinburgh Medical Journal*, November, 1891.)

A unique case, both as regards its character and its operation. The tumor was a multilocular cystic growth, the cysts varying very greatly in size. There was no pedicle. One side of the tumor was composed of friable, closely-grained, spongy-like tissue, which gradually shaded off into firm tissue composing the wall of the main cyst. This was covered with a shining membrane. The minute structure corresponded very closely to that of a fibro-cellular ovarian tumor described by Doran in his work on "Tumors of Ovary, Fallopian Tube, and Broad Ligament," page 101.

These cysts are believed by Tait to develop from the unobliterated urachus, and never to be ovarian, but the author believes his cases from its appearance to differ from those studied by Tait, and to more closely resemble one mentioned in the practice of Knowsley Thornton (*Lancet*, 1880).

The frequency of extra-peritoneal development and growth of papillomatous ovarian tumors is well recognized; they develop at the hilum of the ovary from the remains of the Wolffian body, they usually remain completely interligamentous, possibly they are not the only kind that take their origin in this region, though it is highly improbable that glandular cystoma develops primarily at the hilum of the ovary.

The author quotes Doran that out of seven hundred abdominal sections, twenty-four were for removal of sessile cysts infiltrating the broad ligament. None contained glandular growth.

**Cystitis.** (*Archives of Gynæcology, Obstetrics, and Pædiatrics*, July, 1891.)

The editor, Dr. Goelet, in commenting on the treatment as outlined in a paper by Gaubet (in the *Archives de Tocologie et de Gynæcologie*, January, 1891), states that the best urinary antiseptic is oil of winter-green, given in four- or six-drop doses in capsules four times a day. It will sterilize the urine in a few hours and keep it so as long as the remedy is administered. Gaubet uses salol as the best means of producing an antiseptic condition of



the urine,—from half a drachm to a drachm and a half during the day. It is most efficient in the purulent catarrhs of the bladder. Dr. Goelet states that it is a mistake to give alkalies in cystitis when there is pus in the bladder.

**Leucorrhœa.** (*Archives of Gynæcology, Obstetrics, and Pædiatrics*, July, 1891.)

The editor, Dr. A. H. Goelet, in commenting upon the treatment of the gonorrhœal form, advises injections of creolin solution or sulphate of zinc in preference to a strong solution of bichloride. He also advises that once a day the vagina be dusted thoroughly with iodoform, aristol, or boracic acid, and one or two loose tampons, well coated with vaseline, may be introduced to prevent contact of the inflamed surfaces.

Peroxide of hydrogen will prove a good cleansing agent.

**Retro-Uterine Hæmatocele, with Two Relapses and Recovery without Operation.** By W. Henry Hamersly, M.D., Uniontown, Pennsylvania. (*Annals of Gynæcology and Pædiatry*, August, 1891.)

The absence of symptoms of septicæmia decided the author not to operate, and eventually the accumulation perforated and discharged through the rectum. This fortunate termination should be a subject for congratulation rather than an example of the expectant or medical treatment.

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## OPHTHALMOLOGY AND OTOTOLOGY.

IN CHARGE OF J. E. HARPER, A.M., M.D.,  
Chicago, Illinois.

**Infantile Cataract.**—In the section of Ophthalmology of the British Medical Association the discussion of the treatment of infantile cataract was opened by the president, N. C. Macnamara, F.R.C.S., who advocated operation, when not specially contra-indicated, as soon as the child had finished teething. He regarded iridectomy as of temporary benefit only. Dr. Argyll Robertson thought there was a certain number of cases of cataract for which the operation for artificial pupil was well adapted. One particular advantage obtained by this procedure was that the use of spectacles was avoided. Mr. Malcolm McHardy thought that if the operation of removal of the lens was to be made, it should be done before the child was twelve years old, as the risk from glaucoma, undue irritation, and inflammation from the swollen lens was less before puberty. Dr. L. Toss-will said an artificial pupil should never be made when there were even a few striæ in the peripheral part of the lens. He advocated early operation, at five months. Mr. Lowford thought, where it was desirable to make an artificial pupil, external iridectomy should be tried. The trend of opinion

was against the use of the suction curette in the removal of the lens substance.

**Ophthalmoplegia.**—Drs. W. J. Collins and L. Wilde (*American Journal of the Medical Sciences*, November, 1891) review the pathology of ophthalmoplegia, and offer the following scheme of classification :

- |                     |                                    |   |                                   |                             |
|---------------------|------------------------------------|---|-----------------------------------|-----------------------------|
| I. <i>Cerebral.</i> | (a) Cortical                       | { | Conjugate deviation.              |                             |
|                     |                                    |   | Hemiptosis (?).                   |                             |
|                     |                                    |   | Hysterical ophthalmoplegia (?).   |                             |
|                     | (b) Cortico-peduncular.            |   |                                   |                             |
|                     | (c) Nuclear                        | { | 1. Cycloplegia                    | " Ophthalmoplegia interna." |
|                     |                                    |   | 2. Iridoplegia                    |                             |
|                     | Third nerve                        |   | 3. Palsy of extra-ocular muscles. |                             |
|                     |                                    |   | Ptosis.                           |                             |
|                     | Fourth nerve                       |   | 4. Palsy of superior oblique.     |                             |
|                     | Sixth nerve                        |   | 5. Palsy of external rectus.      |                             |
|                     | (d) Radicular (and commissural ?). |   |                                   |                             |
- II. *Basal.*
- |     |                                     |
|-----|-------------------------------------|
| (a) | Region of pons (vi.).               |
| (b) | " " peduncles (vi. iv. iii.).       |
| (c) | " " cavernous sinus (vi. iv. iii.). |
| (d) | " " sphenoidal fissure.             |

### III. *Orbital* (including peripheral).

They have collected and analyzed one hundred and twenty cases of this affection, with the following results :

*Sex.*—Of 120 cases, 73 were males, 39 females, 8 unstated, giving 65 per cent. of the stated cases as males.

*Age.*—Of the 120 cases, in 111 this was stated. Under ten there were 8 cases; from ten to twenty there were 17; from twenty to thirty there were 26; from thirty to forty there were 28; from forty to fifty there were 19; from fifty to sixty there were 6; from sixty to seventy there were 4; from seventy to eighty there were 3.

*Syphilis as a Cause.*—In 40 cases out of the 120 there was some evidence or other of syphilis apart from the ophthalmoplegia, or in 33 per cent. of the whole. Of the 40 the result in 32 was stated. In 23 there was improvement under treatment, 11 recovered, and in 9 others the improvement was stated to be considerable and substantial; in 7 there was no improvement, 1 was said to be progressive, and 1 was known to terminate fatally.

*Eye Affected.*—Of 109 cases, 1 eye only was affected in 61 cases, both eyes in 48. In the 61 cases in which only 1 eye was affected, this was the right in 31, the left in 30; showing that the side affected is a matter of indifference.

*Distribution of the Palsy as regards various Portions of Third Nerve.*—Of the 120 cases of ophthalmoplegia in which the external ocular muscles were affected, there was evidence of some affection of intraocular muscles in 65. In 29 of the 65 both iris and ciliary muscle were involved.

In the 34 cases in which only one of the two (viz., iris or ciliary) was affected, plus extraocular palsy, in no less than 31 it was the iris and not the ciliary, and in only 3 was it the ciliary and not the iris.

*Distribution of Palsy as regards Nerves Involved.*—Of the 116 cases in which the analysis could be made, in 47 the third nerve alone was affected (in 18 complete, in



29 incomplete); in 42 the third, fourth, and sixth were affected in company; in 11 the sixth alone was affected; in 8 the third and fourth failed together; in 4 the third and sixth are presumed to have been associated in palsy; in 2 the fourth and sixth, and in 2 the fourth alone.

*Result.*—Of the 92 cases out of the 120 in which the result is noted, 53 improved under treatment, 26 completely recovering, and in 14 more the improvement was stated to be considerable; in 15 there was no improvement, in 2 the disease was progressive, and in 22 it was fatal.

*Age and Fatality.*—We have previously suggested that ophthalmoplegia of young children was probably more serious and fatal than that of adults. Of 6 cases under ten in which the result is recorded, 3 died, or 50 per cent.; of the 86 over ten in which the result is recorded, 19 died, or 23 per cent.

**Choroidal Sarcoma.**—Dr. A. Hill Griffith describes the after-results of twenty-three enucleations for choroidal sarcoma, sixty per cent. of which were well at periods varying from three to ten years after the operation.

**Strabismus.**—Mr. Henry Juler reported one hundred and seventy-four cases of strabismus upon which he had operated. Of these one hundred and fifty-one were convergent and twenty-three were divergent squint. Seven of the cases of divergence had been previously operated on for convergence. The author thought more definite knowledge was required: (1) as to the earliest age at which a child could be operated on; (2) whether an adult should be operated on at all; (3) in what peculiar cases advancement of the antagonist should be combined with tenotomy.

**Fluorescein in Diagnosis of Corneal Affections.**—Dr. Adolf Bronner read a paper on the use of fluorescein in the diagnosis and treatment of diseases of the cornea. Fluorescein when dropped into the conjunctival sac does not discolor the normal cornea, but only that portion which is not covered by epithelium. Dr. Bronner uses a two-per-cent. solution of fluorescein and three-and-a-half-per-cent. carbonate of sodium or a two-per-cent. solution of the potassium salt. Fluorescein is useful in detecting small abrasions of the cornea. It enables the surgeon accurately to detect the extent and depth of a corneal ulcer and also how much of the interstitial tissue is affected.

**Granular Lids Treated by Cantharidate of Potassium.**—Dr. J. Santos Fernandez reports five cases of granular eyelids treated by injections of cantharidate of potassium. The results show the treatment to be harmless, if not curative.

**Trachoma cured by use of Knapp's Forceps.**—Dr. F. B. Tiffany, Kansas City (*Denver Medical Times*, December, 1891), reports twenty-three cases of trachoma cured by use of Knapp's improved trachoma forceps.

Dr. Eugene Smith, Detroit (*Jour. of the Am. Med. Assoc.*), publishes a description with a cut of a new cystotome forceps invented by him.

**Fragment of Gun-Cap in Eye Surrounded by Bone.**—Dr. A. D. Williams (*St. Louis Courier of Medicine*) reports the enucleation of an eyeball, the vision of which had been lost by injury from a gun-cap six years previous. The fragment of gun-cap was found surrounded by a ring of bone.

**Enucleation followed by Subjective Light Sensations.**—Dr. J. Walter Park (*Archives of Otolology*) reports a case where enucleation of the eyeball was followed by subjective light sensations. Partial relief was secured from potassium bromide and ergot.

**Apparatus for Measuring the Anomalies of the Ocular Muscles.**—Dr. S. D. Risley (*Medical and Surgical Reporter*, December 5, 1891) publishes the following description of a new apparatus for detecting and measuring the anomalies of the ocular muscles. The essential part of the apparatus is the holder, which can be mounted upon a stand, designed to rest upon a table or desk, or upon a floor-stand placed by the side of the chair occupied by the patient. At the top of this stand there is placed a strong horizontal arm, which is carried to the front of the patient, and supports a second upright shaft, which moves up and down freely but is fastened at any desired height by a binding screw. On this shaft is placed a chin-rest, and at its top the holders and accessories are supported. There are a pair of rings or cells for the reception of the rotary prisms, which are hung on a spring hinge, permitting them to be turned forward and downward below the line of vision, so that they are out of the way when not in use, but can be readily turned upward into place when desired. On the posterior surface of the holders is a ring, which is hung on a spring hinge, which can be turned out of the line of vision or left *in situ* as desired. These rings are designed for the reception of the Maddox double prism or rod, each of which is mounted in a cell, accurately fitting these rings, and may be turned to any desired position, being checked at ninety and one hundred and eighty by a stop-spring. These may be retained permanently in place, but are readily removed and replaced when desired by other cells containing a stenopaic slit, a blank metal disk for excluding one eye, and a third with a central opening two and a half millimetres in diameter, to act as a diaphragm in correcting certain cases of high refractive error with widely-dilated pupil.

The brow-rest is adjusted by means of a screw, and just below the border of this is a spirit-level to maintain in a strictly horizontal position the double prism or the bar of light as produced by the rod. The bar contains an astigmatic chart, and the carrier moves freely to and fro on the bar and holds a series of test cards.

**Tragus Retractor.**—Dr. A. Cresswell Baber (*Archives of Otolology*, January, 1892) describes a tragus retractor which he has invented.



## DISEASES OF THE LARYNX, NOSE, AND SURROUNDING STRUCTURES.

IN CHARGE OF J. PAYSON CLARK, M.D.,

Physician to the Throat Department of the Boston Dispensary; Assistant Physician for Diseases of the Throat, Massachusetts General Hospital.

**Aniline Coloring Matters.**—Bresgen (*Centralbl. f. d. Med. Wissensch.*, December 5, 1891) gives further experiences with these substances. He finds that methyl blue hinders the formation of so-called croupous membrane, and diminishes sensitiveness. The color disappears quickly and a whitish-yellow, tough secretion forms on the surface. This was not the case with hexaethyl violet. Methyl blue is best used in the form of a powder as follows: After the use of the galvano-cautery some pyoktanin wool is wound around the end of a probe or applicator dipped in a methyl-blue solution (1.5–100) and then in the methyl powder and rubbed on the wound. Accidental swallowing of methyl blue does not harm; it goes quickly into the urine, coloring it a dark-green blue. In lupus hexaethyl violet melted on a copper probe was found good. In ozæna a powder of three parts methyl blue to ten of sozoiolol of sodium is useful. In neglected fresh inflammations of the larynx hexaethyl violet in solution (.3–25) applied with Krause's cotton-holder works well. Also when melted on a copper sound and applied to laryngeal tuberculosis, after previous cocainizing, hexaethyl violet gave good results. To further these ends the preparation must be pure and the application careful.

**Laminaria as Foreign Bodies in the Nose.**—Dr. Hessler (*Münchener Med. Wochensch.*, January 12, 1892) reports a case in which a laminaria tent inserted by a physician to dilate the nostril remained for fourteen years overlooked by physicians. For the first seven years it caused only nasal obstruction. Later there began to be a fetid purulent discharge from one nostril. The influence of the local affection on the character and bearing of the patient is interesting. As the foetor increased the patient became sullen, gloomy, and retiring. After removal of the foreign body he became immediately cheerful and social.

**Statistics of Eleven Hundred and Fifteen Operations on Adenoid Tumors.**—Dr. Menière's (*Revue Thérapeutique Medico-Chirurgicale*, December 15, 1891) lecture draws its principal interest from the great experience which he possesses on this subject. He prefers, for diagnosis, digital exploration to posterior rhinoscopy. He insists on the grievous modifications which these growths cause in the skeleton, the facial expression, the hearing, and the general condition of children who have them. The only treatment is removal, and the only instrument advised for this purpose is the cutting forceps. The operation may be done in many sittings,

separated by an interval of from five to eight days, removing only one piece at a time, which is done so rapidly that children bear it well, as a rule. After each operation the patient gargles with cold water, an antiseptic nasal injection is given, and the ears are closed with cotton. On the day of the operation the patient stays in one room. The average number of sittings is three, and often, at the last one, the pharyngeal wall is scratched with a rigid metallic ring [presumably on the tip of the forefinger.—REV.], which procedure clears completely all points not reached with the forceps. Several paintings with pure tincture of iodine complete the cure. The above method is the one always used by this writer.

The second method is to remove all at one sitting. It is necessary to give an anæsthetic. The flowing of blood is often considerable and a febrile reaction may ensue. The child should keep its bed for some time. Chloroform or any other anæsthetic not being absolutely without danger, it appears useless to employ one in "an operation so mild and exempt from real pain."

**A Case of Salivary Calculus in Wharton's Duct.**—Dr. Franz Schmolka (*Prager Medicin. Wochenschrift*, December 30, 1891) reports the following case: A man, fifty years of age, had noticed for a long time a swelling in his mouth, at one time increasing with signs of inflammation, then growing smaller. For six months it had been growing steadily, forming in the left sublingual region a swelling the size of a pigeon's egg. On a part of the surface was a small loss of substance, disclosing a calculus. After incision this was removed and found to consist of calcium phosphate.

**The Tonsils in Health and Disease.**—Dr. Harrison Allen (*Am. Jour. of the Med. Sci.*, January, 1892), speaking of varieties in the formation of the tonsil, says: "The cryptose or pocket-form, with or without associated ridges of lymphoid tissue, is common, while the foliate form is rare."

The variation most frequently seen is a rounded or elliptical mass, consisting, for the most part, of a pocket or crypt directed downward. Above the mouth of the pocket lies a mass constituting the "tonsil" of common language. This alone is cryptose. Very commonly there are, in this part of the tonsil, numerous communicating passages. In some persons the tonsil appears to be lodged almost entirely towards the palato-pharyngeal fold and displayed when the mouth is open. It may be composed of two lobate cryptose bodies, all the crypts being of the same size.

In hypertrophied tonsil, the lower smooth part is often enormously enlarged and can be readily distinguished by a sulcus from the cryptose mass above. Higher up lies a small nodular body which may be called the velar tonsil. This mass, as a rule smaller than the main tonsil, varies greatly in size. It may become pedunculated and hang into the throat, interfering with deglutition.

No matter how large the tonsil may become, it need not constitute a



clinical state unless respiration is impeded. Abscission should be limited to the removal of the hardened cortex. Canals can then be opened on a director and the separate lobes taken up with forceps and removed, care being taken to avoid the opercular fold (as the author calls that part of the palato-glossal fold often seen spreading over the front of the main tonsil). The fold is sensitive, and the slightest wound of it is followed by pain and irritation.

**A Case of Primary Lupus of the Pharynx.**—Dr. Jonathan Wright (*Medical News*, January 9, 1892) reports a case which offers the following points of especial interest: An enormously hypertrophied uvula sprinkled with little surface elevations giving a fungous appearance, the fauces thickened, somewhat congested, showing numerous pale shining elevations. The uvula was excised with a cold snare, and lactic acid vigorously applied. Microscopic examination of the uvula showed it to be tuberculous. A small patch of tubercles was found later on the middle and inferior turbinates in both nostrils.

**Pharyngo-Mycosis.**—This disease, says Dr. H. B. Hemenway (*Medical News*, January 9, 1892), is often confused by general practitioners with follicular tonsillitis. There are many forms due to the growth of different germs. Catarrhal inflammation, dental caries, mouth-breathing, hypertrophied tonsils, bad hygienic surroundings are all predisposing causes. The subjective symptoms are slight tickling in the throat, sometimes decided feeling of obstruction, frequently a hacking cough. The lesions appear as white creamy spots, tenacious and rapidly reproduced when removed, on the pharyngeal wall or around the circumvallate papillæ. The filaments of the plant are easily seen with an amplification of six hundred diameters. It is slowly destructive of the tissue in which it grows, but is more troublesome than dangerous. It may become implanted in the Schneiderian membrane or in the lungs. In the latter situation it might prove serious. Although spontaneous cures at times occur, the disease is extremely chronic. Energetic use of the galvano-cautery is the only satisfactory treatment. As the bacilli thrive best in an acid medium, the writer recommends the application of the negative electrode with large external positive plate.

**Diseases of the Accessory Sinuses of the Nose.**—Prof. V. Cozzolino gives (*Annales des Mal. de l'Oreille, du Larynx*, etc., December, 1891) a description of the instruments and methods which he uses in treating suppuration of these sinuses. The instruments consist of trocars, curettes, probes, etc., of various shapes and sizes. To sound the hiatus semilunaris, pass a curved sound (the tip upward) between the middle turbinated body and the inner wall of the antrum. At the middle of the turbinated body, about three centimetres from the nasal opening, on directing the probe outward it will usually enter the hiatus. The cavity can then

be syringed with warm boric or salicylic acid solutions. In cases where the teeth are perfect and it is necessary to make another opening, it is preferable to perforate the sinus from the nose with a trocar. In making an exploratory puncture the author uses a syringe with slightly curved resistant canula. The puncture is made at the junction of the anterior and middle third of the angle formed by the outer wall and floor of the nose. In probing the frontal sinus the point of a curved probe is passed, between the external wall and the anterior end of the middle turbinated, upward and forward. The sound will be known to be in the sinus by its direction and by the fact that its end is more than five centimetres from the floor of the nostril. Great care must be used in treating the ethmoidal sinuses because of their proximity to the brain. An instrument with pen-shaped end is used in opening these sinuses.

The sphenoidal sinuses are the more difficult to sound. A long, fine, straight probe is directed first downward then upward and backward between the middle turbinated body and the septum until the sphenoidal wall is reached. The point is then carried a little outward and gently introduced into the sinus. The treatment in all cases consists of giving a free opening, antiseptic washing, and, when necessary, curetting.

**Subglottic Laryngitis, a Manifestation of Lymphatism.**—Dr. F. H. Bosworth reports (*Medical Record*, December 19, 1891) four cases of subglottic laryngitis or catarrhal croup, showing that this condition generally, if not always, is a manifestation of a lymphatic dyscrasia. In one case, removal of the lingual tonsil was followed by almost complete cure of a disagreeable cough. In another, the same operation was followed by restoration of lost vocal power and complete disappearance of a subglottic swelling. In adolescent life the subglottic region is still the seat of a comparatively rich lymphatic distribution. It is this tissue, the author thinks, which is chiefly affected in subglottic laryngitis in, at least, the large majority of cases. Syrup of the iodide of iron is, undoubtedly, a specific in most, if not all, manifestations of lymphatism in the young. It is usually given in too small doses. To a child five years old it may be safely given in half-drachm doses of the officinal syrup three times a day; during an acute attack, in ten-drop doses every hour.

**Etiology of Scleroma of the Throat, Larynx, Trachea, and Nose.**—Dr. Rich. Paltauf, in a continuation of his experiments on this subject (*Wien. klin. Wochenschrift*, December 24, 1891), considers especially two points: 1. Are the same organisms found in certain affections of the pharynx, larynx, and trachea which have been found in rhinoscleroma? Is the presence of the bacteria of rhinoscleroma of diagnostic value? 2. To find means to determine exactly the position of the rhinoscleroma and the Friedländer-pneumonia bacteria.

Sketches of fifteen unpublished cases are given. In five the nasal



cavities were the seat of the disease, in some of which the larynx was also affected. Seven cases were of so-called chondritis subvocalis hypertrophica and primary tracheal stenosis, both suspected but never before proved to be connected with rhinoscleroma. In one case the disease appearing first in the larynx developed later in the nose. In one case a small tumor under the right vocal cord was removed and found to contain rhinoscleroma bacteria. In two other cases the author demonstrated the presence of the specific bacteria in the tissues of the larynx, proving that this disease can occur primarily in the larynx and trachea. The most common form in the larynx is the so-called chondritis subvocalis hypertrophica, consisting of a diffuse infiltration of the sides of the larynx below the cords. The vocal cords can also be the site of the disease, more rarely the epiglottis and ary-epiglottic folds. Isolated nodules can also develop in the larynx. In the trachea the disease takes the form of a chronic inflammation leading to stenosis. It is still undetermined whether all cases of so-called primary laryngeal and tracheal stenosis are due to scleroma. Microscopical examination of the secretion and small particles of the tissue might decide this in a doubtful case. (To be continued.)

**Cyst-Formation in Polypi of the Vocal Cords.**—Prof. O. Chiari says (*Wien. klin. Wochenschrift*, December 24, 1891) that cysts or cyst-formations on the cords are probably only rarely retention cysts. The existence of glands on the free edge of the cords, where cysts are usually found, would be a great rarity. The author has never found gland-ducts in a growth of the vocal cords. He has made careful sections of eleven polypi from the cords, and concludes that in such polypi the cyst-formation depends almost always on the widening of lymph-vessels or of connective-tissue spaces or on serous exudations in or under the epithelium.

**Nystagmus of the Vocal Cords.**—B. Baginsky describes (*Berlin. klin. Wochenschrift*, December 7, 1891) the case of a woman who had received, when young, a severe head injury. Marked hysteria developed. The patient had, at various times, attacks of aphonia with dyspnoea. The larynx showed the appearances of chronic inflammation. Besides this there was a constant, almost regular twitching (consisting of short adductive movements) of the vocal cords and arytenoids. If the patient breathed rapidly, this twitching would cease for a few minutes, only to begin later with more intensity. The cause of this condition could not be determined.

**Clinical and Histological Changes in Syphilitically-Diseased Tonsils and Soft Palate.**—Prof. J. Neumann explains (*Wien. klin. Wochenschrift*, December 3, 1891) why syphilis in its later stages should be localized in the same places as in its recent manifestations. In the recent stages moist papules appear on the mucous membrane of the mouth and throat, combined with disease of the voluntary muscles, as shown sometimes by

the subjective difficulty in swallowing. The tertiary forms arise from unabsorbed exudations remaining from the recent stages. The growing together of the soft palate and posterior pharyngeal wall can occur only when the muscles have been diseased.

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## DERMATOLOGY.

IN CHARGE OF WILLIAM A. HARDAWAY, A.M., M.D.,  
Professor of Diseases of the Skin in the Missouri Medical College, St. Louis.

A Papular Acneiform Eruption with Colloid Masses resembling *Molluscum Contagiosum*.—The case described by Payne under this title (*Monatshefte für Praktische Dermatologie*, Bd. iii., No. 10) is one having a resemblance to certain affections of the skin supposed to be due to the presence of psorosperms. The disease had existed in a female aged twenty-nine years for a year and a half. The lesions were on the hands and forearms, and consisted of pale, conical, hard, smooth, papules. There were about twenty such papules on each arm. The eruption first appeared on the extensor surfaces of the wrists and spread from there over the hands. There were also one or two papules between the fingers. The older lesions were hard, showing a marked hypertrophy of the epidermis, but no tendency to scaling. The more recent papules were pin-head in size, and on close inspection showed a minute central orifice from which exuded, on squeezing, several drops of fluid, though there was no spontaneous secretion. The papules were not evanescent, each, having once appeared, continuing throughout the disease. The papules had no connection with the hairs.

In spite of the small central depression, the lesions, on account of the thickened epidermis, resembled warts. In other respects the patient enjoyed excellent health and had a good family history. No cause in the way of local irritation could be discovered, nor was there any reason to suppose that the trouble arose from contagion. The slow and uniform manner in which the disease progressed reminded one of certain affections well known to depend on the presence of micro-organisms. In the way of treatment, at first a lotion and salve containing coal-tar was given, but after eight days no improvement was noted. Then salicylic acid in collodion (2:30) was ordered. The patient returned, after an absence of three weeks, with the disease practically cured, so that no further observations could be made. The microscopical examination was rendered somewhat difficult by the fact that the patient would only submit to having some of the smaller papules removed.

The structure showed these to consist of hypertrophied epidermis. The central orifice appeared to be the duct of a sebaceous gland. Scattered among the epidermic cells were a number of small pearl-like bodies, oval or round, clear and structureless, resembling the bodies found in molluscum



contagiosum. The surrounding epidermic cells were full of granules which did not show a reaction on staining such as micrococci give. Bodies resembling spores of fungi were observed.

The difficulty in drawing conclusions from this examination lies in the fact that it was impossible to determine whether these bodies were parasitic organisms belonging to the group of psorosperms or merely degenerated cells. In its minute structure the disease under consideration presents similarities to molluscum epitheliale and to Darier's "psorospermose folliculaire végétante," and it seems to the author also to resemble keratosis pilaris.

**An Unusual Affection of the Hands.**—Cavafy (*British Journal of Dermatology*, January, 1892) reports this case. The patient, a young woman, aged twenty-five years, had suffered on two previous occasions, while in the Farøe Islands, from eruptions on the hands. At the time the author saw her she presented upon both hands an eruption, the lesions of which consisted of papules or nodules, vesicles, and an occasional pustule. The left hand was the most involved, and upon it the distribution was: on the dorsal surfaces of all the fingers and in the immediate neighborhood of all the metacarpo-phalangeal joints; a few on the dorsum of the hand and along its ulnar border; one on the palm at the base of the little finger; one on the palmar surface of the thumb, and one or two on the tips of the fingers. Upon the right hand the arrangement was similar. The lesions varied in size from a hempseed to a split pea, and the papules were very hard to the touch, moderately raised above the surface, smooth and shining, and of a pale pink color, which disappeared on pressure. The vesicles developed upon the tops of these papules or they occurred independently, being then deep-seated and resembling the lesions of cheiro-pompholyx. The pustules were all placed upon papules in a manner similar to that of the vesicles first described. Some of these lesions were in small groups. The intervening skin was normal, and no scars were noted. No itching or smarting was present,—the only subjective symptom being a slight sensation of heat. The author concludes that the disease most resembles erythema multiforme, but differs from ordinary forms of that disease in the facts that the lesions are pale, are very hard, and persist for a long time. He, however, regards the affection as belonging to this group, and suggests for it the name erythema induratum.

**A Case of Monilethrix.**—The case described by Abraham (*British Journal of Dermatology*, January, 1892) occurred in a well-nourished child aged two years. On a casual inspection the child seemed to be bald, but on closer observation it was seen that the scalp was covered with almost colorless hairs only about one centimetre in length. These hairs were so brittle that it was impossible to extract them with their roots. There was also a follicular inflammation which had, in some places, led to pustules.

On examining the hairs with a lens they presented a beaded or moniliform appearance. Under the microscope the appearance was as follows. The hairs were not of uniform length or thickness. They all showed fusiform swelling at approximately uniform intervals. In the longer hairs as many as fifteen nodes were counted. At the thin portions a double contour could be noticed where the cuticle was visible. In many of these thin parts commencing fractures were seen, and it was noticed that they occurred by an annular split in the cuticle, with a fraying out of the cortical portion. No fractures could be seen at the nodes. There was very little pigment in the hair, but it was mainly collected at the nodes. There were some reasons for thinking that there might be micro-organisms in the hair, but the investigations to prove this had not been completed when the case was reported. The child was born with very little hair, which became more scanty. No other cases of any disease of the hair could be found in the child's ancestry. In most of the cases heretofore reported not only has the disease been congenital, but several members of the same family have been afflicted, and sometimes the affection has descended through several generations. The current view is that this affection is developmental rather than pathological; but if the trouble should be shown to depend on the presence of micro-organisms, we may suppose that the microbes gain entrance into the hairs shortly after birth in certain cases where the hair is scanty and poorly developed.

The Combined Action of the Koch Bacillus and Agents of Suppuration in the Evolution of Lupus Vulgaris.—Brocq, in a communication on dermatology and syphilography in France (*Journal of Cutaneous and Genito-Urinary Diseases*, January, 1892), states that Drs. Leloir and Tavernier have recently made an interesting report to the Congress for Tuberculosis, in which they state that the microbes of suppuration are more numerous in lupus the more rapid the progress of ulceration. When lupus non-exedens has been treated in a way calculated to cause inflammatory reaction, and at times even spontaneously, we see the tubercles take on a flabby fungoid aspect, which is followed by a rapid ulceration and breaking down, which, if the inflammation is severe, may extend to surrounding tissues apparently healthy. In view of the failure of the common therapeutic measures Professor Leloir has instituted a treatment based upon the idea of combating the suppurative phenomena. In the way of remedies he uses subcarbonate of iron, salicylic acid, boric acid, salol, or aristol. He has thus been able, in twenty-four hours, to check the extension of this disease and to bring about cicatrization in a few days. He believes that these ulcerations are not dependent on the pathogenic agents of lupus, but on the microbes of suppuration. Thus, the agents of suppuration, instead of being, as Leloir formerly thought, beneficial in their action, the *microbe gendarme*, he now considers as being the immediate cause of the ulceration and as having a tendency to diminish the resistance of the tissues.



## HYGIENE AND BACTERIOLOGY.

IN CHARGE OF A. C. ABBOTT, M.D.,

First Assistant in the Laboratory of Hygiene, University of Pennsylvania.

Recherches bactériologiques sur l'Angine pseudo-diphthérique de la Scarlatine. (Bacteriological Researches upon the Pseudo-Diphtheritic Anginas of Scarlatina.) (*Arch. de Méd. Exp. et d'Anat. Path.*, 1890, No. 3.)

Wurtz and Burges examined bacteriologically eleven cases of pseudo-membranous angina accompanying scarlet fever in children. Clinically the majority of these cases presented the conditions seen in true diphtheria. In nine cases, in which the pseudo-membranes appeared early, the presence of the diphtheritic bacillus could not be detected. In the remaining two cases, in which the angina did not appear until later (in one case seven, in the other thirty-six days after the appearance of the eruption), the bacillus diphtheriæ was found.

In all cases they found a streptococcus similar to but not identical with the streptococcus of erysipelas.

Zur Frage der Scharlachdiphtheritis. (Upon the Question of Scarlatinal Diphtheritis.) (*Cent. f. Bact. und Parasitenkunde*, Bd. x., No. 1.)

Tangl examined bacteriologically seven cases of typical scarlatina, in all of which the pseudo-membranous condition of the throat appeared during the first week of the sickness. In all of these cases streptococci, identical with the streptococcus of erysipelas, were found. In none of them was the genuine bacillus diphtheriæ of Löffler present. From these observations he coincides with the view of Hensch and Heubner that genuine diphtheria and the diphtheritis of scarlatina are etiologically different affections.

Abbott: Further Studies upon the Relation of the Pseudo-Diphtheritic Bacillus to the Diphtheritic Bacillus. (*Johns Hopkins Hospital Bulletin*, No. 17, 1891.)

In a communication by Welch and Abbott (*Johns Hopkins Hospital Bulletin*, No. 11, 1891) upon the etiology of diphtheria, it was stated that the results of Löffler, who was the first to describe the special form of micro-organism now recognized as the specific cause of this disease, had been confirmed by them throughout. In every one of eight cases of true diphtheria examined by them the bacillus described by Löffler was present. Since the publication of these observations the work has been continued by Abbott, not only upon true diphtheria, but also upon benign affections of the throat. These studies were made upon fifty-three cases of non-diphtheritic affections of the pharynx and tonsils, comprising acute pharyngitis, nine; acute follicular tonsillitis, fourteen; ordinary post-nasal catarrh, eight; simple enlarged tonsils, two; chronic pharyngitis, fifteen; subacute

laryngitis, one ; chronic laryngitis, one ; rhinitis, one ; and two were affections of the tonsils and pharynx which so closely simulated diphtheria as to render a diagnosis, without bacteriological aid, difficult, if not impossible.

In forty-nine cases of this group nothing of particular interest was observed. The culture-tubes showed a variety of organisms, some of which are well known, particularly the pyogenic cocci, while others could not readily be identified. In four of these cases were found organisms which, in their morphology and cultural peculiarities, were so like the genuine bacillus diphtheriæ of Löffler that they were subjected to detailed study. The result of careful examination was that in three of these cases there were present organisms which, microscopically and in their behavior under artificial methods of cultivation, were so like the genuine diphtheria bacillus as to be indistinguishable from it. In the fourth case an organism was present which, in most respects, closely simulated the genuine bacillus diphtheriæ, though it differed in certain minor details. These organisms were all devoid of pathogenic properties, so that they could not be regarded as identical with the bacillus of Löffler, which is highly pathogenic for certain of the lower animals. These observations justify an agreement with the opinion of other observers, particularly Hoffmann and Roux and Jersin, that, under varying conditions, the virulence of the true diphtheria bacillus may be observed to fluctuate in the degree of its intensity,—at one time possessing the property in a high degree, at another presenting a decided attenuation, and not unfrequently a complete absence of pathogenic power.

The organism obtained from cases one, three, and four is believed to be the true diphtheria bacillus, which, from some unknown cause, has lost its virulence.

The organism obtained from case two, though resembling closely the organism described by Löffler, presents differences in its growth on certain media, particularly on potato.

*Fièvre typhoïde expérimentale.* (Experimental Typhoid Fever.)  
By Gilbert and Girode. (*Sem. Méd.*, 1891, No. 23.)

Up to a short time ago opinion was about equally divided upon the subject of experimental typhoid fever, certain authors taking the ground that the conditions seen to follow the introduction of typhoid bacilli into the tissues of lower animals could be explained entirely as a result of the toxic rather than a truly infective activity of the organisms in the tissues. In opposition to this considerable evidence has been presented which favors the opinion that the results of inoculation with this organism appear in consequence of the multiplication of the organisms in the tissues,—*i.e.*, in consequence of their pathogenic or infective activity.

Gilbert and Girode present results which confirm this latter view. They inoculated two guinea-pigs with portions of a pure culture of the typhoid organism. Both showed evidence of disease,—emaciation and diarrhœa. One died after twenty-four, the other after thirty-two days.



At autopsy the tissues presented conditions which do not constantly follow such injections. Of special interest was the condition of the intestinal tract. Here ulcers, as in typhoid fever in man, were present. Typhoid bacilli were demonstrated in the tissues of these animals both by microscopic and cultural methods.

Charrin et Roger: Bacille d'Eberth dans un Épanchement pleural. (The Bacillus of Eberth in Pleural Effusion.) (*Sem. Méd.*, 1891, No. 21.)

The authors describe an unusual case of hemorrhagic exudation into the pleural cavity. The condition appeared after little or no premonitory warning. Bacteriological investigation revealed the presence in the exudate of an organism which, the authors state, was in every way identical with the bacillus of typhoid fever (Eberth). At autopsy no alteration was found in the intestinal tract.

They attempt no explanation for the remarkable condition.

Their description of this organism, however, justifies some doubt as to its identity with the true typhoid bacillus. They state that it is highly pathogenic for mice and guinea-pigs, and that when injected into the thoracic cavity there results a sero-hemorrhagic exudation.

No such observation has ever before been made with the genuine bacillus of typhoid fever.

Eisenhardt: Ueber die Häufigkeit und Vorkommen der Darm-tuberculose. (The Frequency and Appearance of Intestinal Tuberculosis.) (*Dissertation, München*, 1891.)

The statistical material presented in this dissertation is gathered from the protocols of one thousand autopsies upon tuberculous individuals made in the Pathological Institute at Munich between the years 1886 and 1890. Children under sixteen years of age are excluded. In the one thousand cases only one of primary intestinal tuberculosis is noted. In five hundred and sixty-six cases secondary intestinal tuberculosis was seen. In three of these five hundred and sixty-six cases there was no evidence of pulmonary involvement. In four hundred and twenty-seven cases no evidence of tuberculosis was present in any of the organs except the lungs. In four hundred and eighty-nine cases cavities, and in four hundred extensive cavity-formations, were noticed.

Intestinal infection results most commonly in pulmonary cases from swallowing the sputum. The ileum is commonly the first point in the intestines which becomes affected. In only one case was an undoubted tubercular infection of the mucous membrane of the stomach made out. In only ten cases was complete and in twenty-five partial healing of the intestinal ulcers observed. Perforation of the intestines was found in twenty-eight cases.

## PATHOLOGY.

IN CHARGE OF A. J. SMITH, A.M., M.D.,

Professor of Pathology in the Medical Department of the University of Texas, Galveston, Texas.

Arens: Ein einfacher Nachweis von Tuberkelbacillen durch Färbung, nebst einer Angabe zur Färbung von Bakterien in fettreichen Substraten. (A Simple Method of Staining Tubercle-Bacilli, together with a Method of Staining Bacteria in Fatty Media.) (*Centralbl. f. Bakteriologie und Parasitenkunde*, January 2, 1892, p. 9.)

Arens, of the Hygienic Institute at Würzburg, claims the advantage of rapidity and ease of application for the following method of staining tubercle-bacilli. A crystal of fuchsin of the size of a mustard-seed is placed in a watch-crystal and dissolved in several drops of absolute alcohol; to this saturated solution two or three cubic centimetres of chloroform are added. A slight turbidity becomes apparent at first, but this quickly subsides with the precipitation of a flaxy deposit of fuchsin. A cover preparation of the ordinary kind is then placed for from four to six minutes in the clear solution, the chloroform is permitted to evaporate, and differentiation performed in ninety-six per cent. alcohol to which a few drops of muriatic acid have been added (HCl, 10; aq. dest., 260; alcohol, 730). The acid is then washed off in water, and the specimen is ready for examination in the same medium. As a contrast-stain the author commends methylene blue. Sections are treated in a very similar manner, and require very little longer exposure to the primary coloring agent.

In the same article the author recommends a chloroform-methylene-blue solution for staining bacteria in milk, cream, sausages, and other fatty substances. For example, a small portion of milk is placed on a cover, diluted with an equal amount of water, dried, and fixed to the cover by gentle heat. The preparation is then stained with a solution made by adding to several cubic centimetres of chloroform twelve or fourteen drops of a saturated alcoholic solution of methylene blue. The cover is exposed to the stain for from four to six minutes, the chloroform permitted to evaporate, and the excess of blue washed out with water.

Galtier: Nouvelles Recherches sur la Virulence de la Viande des Animaux tuberculeux, etc. (Recent Experiments upon the Infectious Properties of the Flesh of Tubercular Animals.) (*Lyon Médicale*, No. 10, 1891, p. 325.)

A recent series of experiments practised by Galtier upon the question of the virulence of the flesh of tubercular animals consisted in the feeding of the raw meat from tubercular cows to chickens, cats, dogs, and guinea-pigs. In none of his subjects, however, even in the last-named animals, was he enabled to produce any tubercular lesion; and in consequence he believes that the flesh of tubercular animals, except such parts as may show the actual tubercular presence, may be safely used for food.



Out of nineteen attempts to establish an intra-uterine transmission of tuberculosis in bitches and guinea-pigs, the author succeeded but four times, thus indicating that the progeny of a phthisical mother is usually born healthy, and that the hereditation of tuberculosis is only exceptional.

Steinhaus: Weitere Beobachtungen über Carcinom-Einschlüsse. (Further Observations upon Cancer-Nests.) (*Virchow's Archiv*, January, 1892, p. 175.)

Steinhaus, of the pathological laboratory of the University of Warsaw, publishes a series of histological drawings of epithelial nests in squamous epithelioma, showing various appearances, such as those which have been described by Pfeiffer, Wilkham, and others, as psorospermial bodies. The author does not, however, look upon these as parasitic bodies, but regards them as epithelial cells which have undergone or are in an intermediate stage of the horny change seen in these tumors as well as in normal skin epithelium. Under a high power, after fixing with sublimate solution, hardening in alcohol, embedding in paraffin, and staining with hæmatoxylon, eosin, and safranin, or with hæmatoxylon, nigrisin, eosin, and safranin, the central cell of these nests is to be seen as a large rounded cell, surrounded by either one single or a number of closely-packed epithelial cells, from which it is usually separated by a space, in which are to be seen, however, fine, radiating prolongations from the cell body. This ciliated-like communication exists properly between all the cells of the epidermis, and the fibrils appear to be formed in the protoplasm of the cells. In the keratoid change which takes place in the cells, the central cell of the concentric mass shrinks away from its enveloping cells, these communicating fibrils are lost, and the mitom becomes contracted into a small deeply-staining clump, leaving the substance of the cells to stain as a faint, homogeneous, structureless body. Where the change affects a number of cells scattered through the section, the appearance is that of a number of clear spaces or vacuoles containing homogeneous cells with small, deeply-staining nuclei; and where a number of adjacent cells are affected the size of the vacuole becomes larger, and the resemblance of the group of contained cells to psorospermial bodies even more marked. Virchow, commenting upon this paper by Steinhaus, compliments the author upon the beauty of demonstration and care in preparation, expressing himself as in sympathy with the views indicated by the author, and referring to his own suggestions of the protozoid nature of these elements in cancer and in "molluscum contagiosum." He regards the subject as only fairly opened by such investigations as this, and characterizes as superficial those papers which speak of the question of a parasitic origin for these tumors as definitely settled.

## CLIMATOLOGY.

IN CHARGE OF GUY HINSDALE, M.D.,

Lecturer on Climatology in the University of Pennsylvania, Philadelphia.

"Under the Southern Cross."<sup>1</sup>—This excellent guide to the sanitariums and other charming places in the West Indies and Spanish Main has been recently issued by Dr. William F. Hutchinson. It is a correct and trustworthy guide to these islands, and has been written after having visited them annually for twenty years. Each place has been explored, and sufficient time has been given to ascertain the true nature of its climate. The great differences between these islands in this respect are not usually understood, and physicians make great blunders in failing to discriminate between them. Few physicians are aware that St. Kitts, for example, would be an unfortunate choice, while Barbados, with its drier air, better hotels, and attractive surroundings, would be a far more desirable point for the invalid.

The conclusion which Dr. Hutchinson reaches with reference to the results in cases of phthisis is as follows: He has no hesitation in saying that it is a "serious mistake to send a case of consumption in any form or at any stage, except perhaps the very first of bronchial irritation, to these islands of the South; one reason being that the temperature, an absolutely permanent one for certain seasons of the year, is always sufficiently high to produce perspiration, which in a well person, or one affected by certain nervous diseases, is a good thing, but which in a consumptive weakens the patient.

"In all my twenty years' experience among the tropics, I have never seen a case of advanced tubercular disease improved to any extent or in any permanent way by a residence therein, temporary or otherwise. On the contrary, it has been my sad lot to aid in preparing for the grave more than one lonely friend who had left all that life holds dear behind in order that he might seek a futile chance for life; and I cannot say in too strong words, nor with too emphatic accents, that it is worse than useless to send consumptives to these islands."

Diseases of the throat, however, such as are catarrhal or irritative or depend for continuance upon malignant Northern winters, are rapidly improved, and in many cases cured, by the change. Functional or nervous throat disease yields at once to the West Indian climate. Rheumatism is always aggravated by the dampness, and particularly at Bermuda, where, after nightfall, great waves of moisture roll in from the ocean. Rheumatism is a common affection of the inhabitants.

A visit to the West Indies in midwinter cannot fail to interest the traveller. The mild tropical climate and the rapid transition from English to

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<sup>1</sup> By W. F. Hutchinson, M.D., 12mo, 232 pp., Providence, R.I., 1891.



French and Spanish settlements unite in affording a luxurious and entertaining mode of life. Unfortunately, few can enjoy it.

Dr. Hutchinson's book is at once entertaining and instructive. The illustrations from photographs and sketches add largely to its interest. Its chief value, however, lies in its frank, unbiased opinions as to climatic features, and it should certainly be consulted by both physician and patient before venturing to make the journey of which it treats.

**Charts Showing the Probability of Rainy Days; Charts Showing Average Monthly Cloudiness.**<sup>1</sup>—These publications consist of twenty-four maps, 18×24 inches, issued by the United States Weather Bureau. They show at a glance, for any point in the United States, for each month in the year, the proportionate number of rainy days and of cloudiness as determined during eighteen years of observation by the Signal Service. It is possible, by reference to these charts, to note the relative amount of sunshine and the complement of cloudiness for any given locality, and they thus constitute a valuable contribution to medical climatology. In choosing a health resort it is highly important to select a place affording the maximum of sunlight and opportunity for exercise in the open air. The conditions of the soil and sky favorable to the invalid are almost diametrically opposed to those favorable to agriculture. By consulting these maps the physician or the farmer will learn much that will be of practical advantage to him.

• **Hyères and Costabelle, Riviera.**<sup>2</sup>—These are the most southern of the attractive sea-shore resorts of Southern France. Hyères is one of the oldest and most picturesque, and is better known to American travellers than Costabelle, which is the newest of all these resorts. Costabelle is about a mile from Hyères and two miles from the Mediterranean, and occupies a beautiful position on a southern hill-side. It is thus protected from the mistral, a northwest wind that is much dreaded by invalids in this region. Surrounding forests of pines, oaks, and olives cover the hills, and from every side there are beautiful views of the plain that sweeps down to the Mediterranean. Superb villas and châteaux, with their extensive parks, afford every comfort and, if necessary, absolute seclusion. There are also a number of first-class hotels in Costabelle.

The mean maximum temperature in March is 59.8°; in April, 63.3°; mean minimum temperature, March, 42.3°; April, 47.2°; relative humidity, 71 per cent. Rainfall, March, 2.26 inches; April, 3.11 inches. These data are almost precisely those of Wilmington, North Carolina, excepting that the latter has an advantage in having a humidity of only sixty-five per cent. in February, March, and April.

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<sup>1</sup> Washington, 1891. Folio.

<sup>2</sup> New York Medical Record, January 16, 1892.

# FORENSIC MEDICINE.

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IN CHARGE OF LORENZO D. BULETTE,  
Of the Philadelphia Bar.

## *A CASE EXEMPLIFYING GROSS NEGLIGENCE.*

It may be of interest to the physician to know that the act of leaving his horse standing unfastened, or if unfastened then unattended, in a populous place, while making a professional visit, constitutes gross negligence, for which he will be responsible to the person who suffers injury thereby; and this too in face of the fact that the known qualities and habits of the animal are such as to induce the belief of perfect safety in so doing. Evidence of the quiet and gentle character of the animal, or to the effect that he was accustomed to stand without being tied, must, in such case, be disregarded by the jury in reaching their verdict.

This is the law as it was laid down in *Overington vs. Dunn*,<sup>1</sup> which was an action for damages for an injury caused in the following manner, as appears from the evidence at the trial:

The defendant was a practising physician, who, on the day the injury occurred, had left his horse and gig in a lane about ten yards from the door of the house in which his patient was. He did not secure his horse in the ordinary way, or leave any person in charge of it. The position of the defendant, while attending his patient, was such that he could see the horse from the place where he stood. But, while the defendant was engaged in the examination of his patient, the horse unperceived passed out of the lane into the street leading down through the built-up portion of the city, and, while going at a considerable rate of speed, came in contact with the horse of the plaintiff, which was in a team attached to a wagon. The shaft of the defendant's gig entered the plaintiff's horse, causing an injury from which the animal died.

The defendant's evidence showed, and it was received in this instance without objection, that the horse was well broken; that he was kind and tractable; and that he was accustomed to stand for hours together without being tied. Further evidence, on the part of the defendant, gave a description of the place in which he left his horse. The house was in the suburbs, and built upon a lane or court about thirty feet wide. Across the lane where it opened into the street there was a large gate, which the defendant

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<sup>1</sup> 1 Miles, 39.



found open and left it so. Owing to obstructions, he was unable to drive quite up to the door of the house, but he drove as near to it as the circumstances of the place would allow. It also appeared that, owing to these obstructions, it was impossible for the horse to get from the place at which he was left without backing for quite a distance.

The judge before whom the cause was tried charged the jury, that negligence was a question of fact for their consideration, but that, in deciding it, they ought not to take into view the peculiar qualities of the defendant's horse; they should rather consider and decide whether the care taken by the defendant would be sufficient in the case of any horse, whatever his known character and disposition. And this, on appeal, was affirmed to be the law.

Negligence is the omission to exercise that degree of care which the law requires; and it can occur only in cases where there is legal obligation to observe care. If no care be taken where the law requires it, the negligence is gross. If some care be taken, but less than the law requires, the negligence is greater or less according to the degree of deviation from the legal requirement.

It is sometimes supposed that, where little or no danger is to be apprehended from the omission of care, the obligation to exercise care is proportionally less or does not exist at all; and such appears to be the view of the defendant in this case. But his idea confounds the fact of negligence with the danger or risk attending it. They are, however, entirely distinct. Cause and effect are not more so. A grossly negligent act, as the law would term it, may, in fact, be attended with very slight risk; while, on the other hand, an act perfectly proper, and performed with extraordinary care, may, from causes not foreseen and for which the agent may not be responsible, be followed by disastrous results.

In this case there was no evidence of any care used by the defendant to restrain his horse at the time he left him. On the contrary, it is express that he left his horse at large. In the eye of the law his negligence was gross; it could not be greater. He, no doubt, thought that there was no risk attending his neglect. It may be conceded that most persons, as his counsel asserted, would have done as the defendant did, but the event proved that it was unsafe. It was an error of judgment; and the law makes him responsible for the consequences.

## BOOK REVIEWS.

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INTERNATIONAL CLINICS: A QUARTERLY JOURNAL DEVOTED TO MEDICINE, SURGERY, GYNÆCOLOGY, PEDIATRICS, NEUROLOGY, DERMATOLOGY, OPHTHALMOLOGY, LARYNGOLOGY, AND OTOTOLOGY. Edited by Dr. J. M. Keating, Dr. J. P. C. Griffith, J. M. Bruce, M.D., and D. W. Finlay, M.D., of London. Philadelphia: J. B. Lippincott Co., 1892, vol. iv.

The fourth volume of this series closes the first year of this publication. The present volume is in all respects the worthy successor of its predecessors. One would not expect in a work built up by the combined efforts of forty or more writers to perceive any very marked improvement where from the first the standard of excellence has been as high as in the *International Clinics*, but it might very easily, with very little neglect on the part of the editors, fall far below its accustomed grade; so that what might otherwise seem faint praise, to say that the management is maintaining a certain degree of excellence, comes rather to be high praise. The better medical teachers do not differ so widely when viewed in groups of forty as to permit any one volume of the series to be much better than any of its fellows, but in the decision of whose teaching shall be permitted publication, the recognition and exclusion of the poor,—and there must be many poor articles submitted, and many old ones scarcely regarnished,—here is a field for the display of editorial judgment.

The volume is opened by a well-executed portrait and a biographical sketch of the late Dr. Charles T. Parkes, of Chicago. As was suggested in the review of the second volume of last year's issue in several journals, this feature of the work might well be extended. The lives of many of the prominent medical men of the world contain much of importance to the history of the advance of medicine, as well as afford many points of sympathetic interest to medical readers.

The clinical part of the book comprises forty-three clinical lectures and clinical articles expressly prepared for the work. As usual, they are well distributed over the field of the science, and are almost all worthy of the fullest commendation. The medical section opens with an interesting and clear-cut account of various forms of *purpura hæmorrhagica* by Professor Oliver, of the University of Durham, England. One of the very best articles in the whole book is that of Dr. Gilman Thompson, of New York, upon the use of antipyretics, and especially upon the value of Brand's method in the reduction of temperature in typhoid fever; the author is favorably disposed towards the employment of the cold bath, but judiciously and fairly criticises blind adherence to it, as one should criticise adherence to any treatment without constant reference to the indications of the case. "To follow a rigid rule that every case be bathed or given internal antipyretics because the thermometer records a certain temperature, say of 102.5° F., is liable to lead us into grave error. The conditions of the heart and pulse, the respiration, and the rapidity of emaciation are in many cases far safer guides for treatment. . . . My experience of a limited number of cases treated by the Brand's method justifies the belief that it is a very valuable therapeutic agent for typhoid fever, especially in such cases as are seen early—*i.e.*, before the end of the first six or eight days—and in which no serious complication already exists. I have not yet had enough experience with it to be convinced that



it should be adopted as a routine method to the degree in which Brand employs it." A case of hydronephrosis of intermitting nature, occurring in a young woman in whose history there was no record of the manifestations of any acute affection which could have exercised a causal influence upon the renal lesion, affords John Syer Bristowe, of London, text for an interesting clinical lecture upon this affection, in which with especial clearness he refers in this case the origin of the cause to embryonal or early post-natal life. The accounts of two other cases bearing upon the first as side-lights are also briefly delivered. It is refreshing after the months of wrestling with the specific treatment of tuberculosis by tuberculin, gold and iodine, and what not, to feel once more that, even though the desiderata are not yet secured, there is at least a rational treatment of pulmonary consumption; and it must stand as a credit to Dr. Frederick P. Henry, of Philadelphia, that at a time when the excitement over tuberculin was at its height he should have delivered a lecture upon the treatment of the disease as clear and practical as is published in this volume. There is little new in it, of course, but it is well put, and its scope and reference give evidence of the earnestness of the scientific physician.

Of the surgical papers, those of De Forrest Willard, of Philadelphia, upon osteotomy for curved tibia, of Morgan, of London, upon defective gait, of Tiffany, of Baltimore, upon the expedience of operating during railway shock, of C. B. Nancrede, of Ann Arbor, Michigan, upon trephining in traumatic epilepsy, and of Peters, of Toronto, upon tumor of the spinal meninges, are perhaps those which will most attract notice. The first of these is marked especially by the choice of cases illustrative of the points taught, by the clearness of the exposition, and by the excellent plates which accompany the text. The lecture upon defective gait is in every respect a good one, showing decided surgical knowledge and remarkable originality; particularly interesting are the remarks upon the development of lateral curvature and the explanation of the differences of gait in hip-joint disease, sacro-iliac disease, and psoas abscess. In Professor Peters's article upon tumor of the spinal meninges the division from a clinical point of view of the causes of pressure on the cord is very satisfactory, the author referring them to three classes, viz.: 1, violence (fracture, dislocation, and hemorrhage), the symptoms coming on almost immediately; 2, inflammatory (cicatricial, bony, or fibrous tissue, tubercular and syphilitic); and 3, tumors (malignant and non-malignant).

In the section on gynæcology there are five papers, all of exceeding value and most creditable to their authors. The first of these, upon the removal of the uterine appendages, by Champneys, of St. Bartholomew's Hospital in London, will prove of undoubted interest to those practitioners of this section of medicine who do not ally themselves with the disciples of that most astute gynæcologist, Mr. Lawson Tait. Its import is summed up by the motto at its close,—"*commendat rarior usus.*" The last lecture of the section is that by Dr. E. P. Davis, of Philadelphia, upon destructive operations upon the fœtus, a particularly clear exposition of the use of the cranioclast and cephalotribe.

Since the beginning of the series the section of neurology has invariably been the fullest and most satisfactory of the special departments of medicine; the necessity for clinical records in the study of neural physiology and pathology being evidently at the bottom of the activity manifested in the subject by those interested in it. Of the nine or ten lectures, those which are to be mentioned because of their particular excellence are those of Starr, of New York, upon hypnotic suggestion in states of subconscious pain, Gray, of New York, on clinical aspects of chorea, Coupland, of London, upon cerebral rheumatism, Hammond, of New York, on migraine, Eskridge, of Denver, on ataxia, and Dana, of New York, on arm palsies. Of all these easily the first is that of Dr. Coupland on cerebral rheumatism. This term the author accepts from Trousseau for a form of rheumatism in which the nervous symptoms are especially prominent, delirium, insomnia, and hyperpyrexia. A con-

siderable portion of the lecture is taken up by a discussion of the character of the last phenomenon, the author regarding it as a nervous manifestation, and as such an evidence of this variety of the disease.

Before dismissing the volume it would be manifestly unjust not to call attention to the lecture of Dr. Arthur Van Harlingen, of Philadelphia, upon the present aspects of the leprosy question, a most careful and interesting article reviewing the knowledge of the occurrence and spread of this disease. It is illustrated by a map of the world showing the distribution of leprosy, usually along the sea or lake coast. The author is evidently impressed with the slight degree of contagiousness of the disease, and in concluding makes brief mention of the proposed national leprosy hospital in this country, calling out prominently the difficulties to be encountered in the foundation and maintenance of such an institution, and its compulsory occupation by the affected.

Your critic regrets exceedingly that lack of space should prevent further mention of the individual articles. The whole work bears the stamp of earnest endeavor on the part of the contributors and editors, and of a determination on the part of the publishers to give a beauty and permanence to these records. The entire effort is to be applauded; and how the profession failed to demand such a class of publications before this is not to be explained.

A. J. S.

**A PRACTICAL MANUAL OF DISEASES OF THE SKIN.** By George H. Rohé, M.D., Professor of Materia Medica, Therapeutics, and Hygiene, and formerly Professor of Dermatology in the College of Physicians and Surgeons, Baltimore; assisted by J. Williams Lord, A.B., M.D., Lecturer on Dermatology and Bandaging in the College of Physicians and Surgeons; Assistant Physician to the Skin Department of Johns Hopkins Hospital. Philadelphia: The F. A. Davis Co., 1892. Pp. 303.

The author of this manual, believing that the study of cutaneous diseases is made unnecessarily difficult by reason of the prolixity of many of the text-books upon the subject, has endeavored, with reasonable success, to produce a book which in small compass shall include all that is essential to enable the general practitioner to recognize and treat successfully diseases of the skin.

The book is eminently practical, matters of theory receiving little or no consideration. Attention is paid chiefly to the clinical features of the various diseases occurring upon the skin, and to their treatment. The descriptions of disease are concise and accurate, and the directions as to the treatment, although brief, are, in the main, judicious.

In discussing eczema the author calls attention to a hitherto undescribed, acute, general eruption which occurs in women suffering from laceration of the cervix uteri, and which yields to treatment only after repair of the laceration.

We are scarcely inclined to accept the author's high estimate of the value of arsenic in the treatment of eczema. Experience has led us to regard it as only occasionally useful, and then only in minute doses.

Acne vulgaris is regarded as due in the majority of cases to abstention from the use of soap, a view which we think scarcely tenable; nor do we believe that experience justifies the statement that acne rosacea occurs usually in those addicted to the excessive use of alcoholic beverages. We are quite sure that in the majority of these cases no such etiological factor is present.

Herpes zoster is regarded as properly belonging among the acute infectious diseases, because of its strictly self-limited course, its occasional epidemic character, and the extreme rarity of second attacks.

In stating that leprosy "is probably contracted by inoculation during the sexual act," does the author wish to convey the idea that this is the ordinary method of contracting the malady?



In discussing the treatment of scabies no mention is made of  $\beta$ -naphthol, a remedy introduced by Kaposi, and one deserving mention as being far more cleanly and agreeable than the commonly-prescribed sulphur, and no less effective.

Some eighty pages, or about one-fourth of the entire volume, are devoted to the consideration of cutaneous syphilis.

In conclusion, while recognizing the many excellences of this small volume, we cannot help expressing the opinion that manuals of this kind, however excellent in their way, must of necessity have but a limited value for the general practitioner, and are chiefly of use to the student preparing for examination, who has but little time to devote to theory and elaborate detail.

M. B. H.

NINE HUNDRED AND FORTY-FOUR EXAMINATION QUESTIONS ON ANATOMY. By M. Levis and W. Henry Price, M.D.

These gentlemen have prepared this little work with great care and thoroughness. It will be very useful to students in showing them what questions are asked in examination, and the importance of answering in as few words as possible. A comparative table of hernial coverings and "a few anatomical facts memorized by association of numbers" also add to the usefulness of this little book. Every student of anatomy can find information in its pages, and we cannot do better than heartily to recommend it.

J. P. T.

HYDATID DISEASE IN ITS CLINICAL ASPECTS. By James Graham, M.A. (Edin.), late Demonstrator of Anatomy, Sydney University; Medical Superintendent, Prince Alfred Hospital, Sydney. Illustrated with thirty-four colored plates. Edinburgh and London: Young J. Pentland. Philadelphia: J. B. Lippincott Company. 8vo, pp. 195.

This work was originally undertaken as a thesis for the degree of doctor of medicine, and the profession is indebted to Dr. Graham for the excellent manner in which he has presented the various manifestations of this most interesting disease.

In the introduction it recounts briefly the various opinions that have been held regarding the nature and life-history of entozoa affecting man, and the discussion regarding *Bothriocephalus latus* will interest all physicians.

The author's description of the prophylaxis, propagation, and mode of infection by the *Tænia echinococcus*, as well as the chapter on hydatid cysts, is remarkably terse, clear, and forcible. In the section devoted to diagnosis, Graham says, "The presence of a tumor with globular and cystic feel, slowly growing, without constitutional symptoms or pain, points to hydatid disease, which diagnosis is rendered absolute by the detection of a scolex or hooklets of the *Tænia echinococcus* in the liquid removed by an exploratory puncture." A chapter is devoted to hydatid disease of each organ of the body, and also two to operative treatment, which will greatly interest surgeons. The concluding chapter is devoted to the details of thirty cases of this disease.

Too much cannot be said in praise of the thirty-four colored plates showing most of the organs affected with this disease, many of which are executed so artistically as to compel the reader's admiration. The paper, typography, and press-work are exceptionally fine.

J. D.

THE YEAR-BOOK OF TREATMENT, 1892. Published by Lea Brothers & Co., Philadelphia.

This book is intended to supply practitioners of medicine and surgery with a critical review of the contributions to medical literature for the year. With the ever-increasing supply of new medical theories, and the vast amount written for and against them, it is a great relief to find such a book as this at hand. Be-

tween this mass of literature on the one side and the Index Medicus on the other it is very important for practitioners that there should be some intermediate measure by which they can be made acquainted with the best thought of the leaders in their profession, especially in regard to treatment. This book is intended to supply the want. Consultation of its pages will enable physicians to see at a glance the most important articles written on the subject in which they are interested. A short and condensed account of what each author has written accompanies the reference. Thus, on tetanus (*e.g.*), all the important remedies employed in its treatment are mentioned, and the views of several men expressed on each drug. That this work has been thoroughly done we need no further evidence than is found by referring to the table of authors consulted, where we find over nine hundred names. Such standard books of reference as this every practitioner would do well to have in his library, and the authors deserve great credit for their painstaking and systematic work. J. P. T.

THE MÜTTER LECTURES ON SURGICAL PATHOLOGY, 1890 to 1891. By Roswell Park, A.M., M.D.

These lectures, delivered before the College of Physicians of Philadelphia between 1890 and 1891, cover admirably the ground which it was intended they should by the will of the late Professor T. D. Mütter. The newest phases of the old and familiar doctrines have been clearly outlined, and certain subjects treated of with which the general practitioner is not generally familiar. The lectures number ten in all, and cover such general ground as the influence of inflammation, of traumatism, etc.; the causes of infection, pyogenic organisms, surgical fever, peritonitis, tetany and tetanus, actinomycosis, tuberculosis, pneumonia, influenza, etc.; erysipelas, variola, etc.

The work shows evidence of careful research through the literature of this interesting subject. A very complete bibliography is added at the conclusion of the third chapter, which represents the books and papers consulted in the preparation of these lectures. The author also gives a table of the results of his own experiments, showing that a large number of different microbes are present when the actinomycosis fungi provoke suppuration. The fungi themselves, therefore, cannot bring about this pathological condition. The thoroughness of this work warrants a belief in its practical usefulness, and that there are a great many views expressed in its pages which will be of service to the general practitioner. The author has endeavored to collect only valuable and reliable information, and has omitted what is useless. It is to be regretted that the reprint from the Annals of Surgery has not been bound with a stiff cover, so as better to preserve this valuable book.

J. P. T.

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EDITOR.



# INTERNATIONAL MEDICAL MAGAZINE.

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## ORIGINAL COMMUNICATIONS.

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### *THE FACTORS CONCERNED IN THE PRODUCTION OF SUPPURATION.\**

BY A. C. ABBOTT, M.D.,

First Assistant, Laboratory of Hygiene, University of Pennsylvania.

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THAT suppurative processes occurring spontaneously in man are in one way or another dependent upon the presence of bacteria in the tissues is a fact too well established to require discussion before this assembly.

Since the observations of Rindfleisch,<sup>1</sup> Waldeyer,<sup>2</sup> Von Recklinghausen,<sup>3</sup> Klebs,<sup>4</sup> and others, upon the suppurative diseases of wounds, which pointed in the main to their being of an infectious nature, our knowledge upon the subject has made such advances that we are to-day in a position to understand and control the more important of the hitherto obscure conditions underlying these processes. In asking your attention to a consideration of the factors concerned in the production of suppuration, it is with the view of discussing some of the more recent and in certain instances not yet proved hypotheses that have been advanced in explanation of the phenomenon.

Since the work of Ogston,<sup>5</sup> Rosenbach,<sup>6</sup> and Passet,<sup>7</sup> opinions that have been held in regard to suppurative processes in general have, in the main, been in accord with evidence accruing from bacteriological studies; and have agreed in considering the organisms described by these observers as the specific etiological factors in the production of the conditions. But in the light of more recent observations, to which I ask your attention in this paper, it appears that we shall have to subject these views to a certain degree

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\* Address delivered at the semi-annual conversational meeting of the Pathological Society of Philadelphia, April 28, 1892.

of modification, and consider suppurative processes as a possible result under peculiar circumstances, not only of organisms other than those to which specific pyogenic properties have been attributed, but also to chemical substances that in some instances are, and in others are not, connected with bacteria or their life processes.

So interesting are the phases through which our acquaintance with this phenomenon has passed in its evolution to the position it now occupies that, at the risk of presenting observations already known to many of you, I shall ask your attention to a superficial review of some of the more prominent contributions upon which our present knowledge of the subject is based.

Up to the date of its publication the most important observation that was made upon the bacteria found in the pus of abscesses in human beings were those of Ogston,<sup>5</sup> 1881. In this publication he called attention to the constant presence in pus of spherical organisms that were seen to have a characteristic grouping. He noticed that these organisms were never absent from the pus of acute abscesses, and that, on the contrary, they were rarely to be seen in the contents of cold abscesses. He found that in the acute, circumscribed abscess-formations the organisms most commonly present were spherical, and were grouped together in irregular clusters, somewhat resembling clusters of grapes. On the other hand, in the spreading or phlegmonous suppurations the organisms most commonly present were not found in these irregular clusters, but rather in chains somewhat resembling strands of beads. For the former, the clustered cocci, he suggested the name staphylococci, and for those appearing in chains he proposed the name streptococci.

From his observations he concluded that the staphylococci were most commonly concerned in circumscribed suppurations which were characterized by necrosis about the point at which the organisms were located, while the streptococci, in his opinion, gave rise to tissue-changes, most conspicuous in alterations in the lymphatics, and consequently in their spreading tendencies.

As a result of injections into lower animals of material containing the staphylococci a condition was produced that resembled somewhat a soft chancre. "The centre of the mass," he states, "was of a yellow color and was soft and necrotic in character. It contained a mass of closely-packed staphylococci, about which was a zone of tissue of a waxy, homogeneous appearance that increased in extent as the cocci continued to multiply." The changes in the tissues resulting from the introduction of the streptococci were different from this. In general there was a waxy necrotic appearance of the tissues about the point at which the streptococci were deposited, but the further behavior of the organisms differed markedly from that of the staphylococci. Instead of a localization at the point at which they found access to the tissues, there was a tendency towards an extension along the lymphatic spaces and the ultimate production of a process analogous pathologically to erysipelatous inflammation.



In 1884, Rosenbach<sup>6</sup> confirmed the observations of Ogston, and, by means of the methods recommended by Koch,<sup>8</sup> succeeded in isolating in cultures the organisms that Ogston had described from microscopical examination. He found, as Koch had already suggested, that the organisms commonly concerned in suppurative inflammations were not a heterogeneous mixture of bacteria, but that they represented certain definite species with fixed morphological and biological characteristics; that the organisms, once having gained access to wounds, were followed by more or less constant alterations in the tissues and retardation of the processes of healing. From different conditions of suppuration he isolated four different species of bacteria, which he designated by the names *staphylococcus pyogenes aureus*, *staphylococcus pyogenes albus*, *streptococcus pyogenes*, and *micrococcus tenuis*. Most important in Rosenbach's work was the isolation of these organisms in pure cultures, and the establishment of their relation to acute suppurative processes, particularly the suppurative processes of bone,—*i.e.*, infectious osteo-myelitis. Through inoculations into lower animals he demonstrated that cold abscesses, from which the pyogenic cocci described by him were absent, were most commonly tuberculous in their nature.

Almost simultaneously with Rosenbach, Passet,<sup>7</sup> in 1885, confirmed throughout Rosenbach's work, and in addition described more minutely the pyogenic organisms, particularly their reactions to chemical and thermal influences, and their behavior under varying methods of cultivation. Passet's description of the specific pyogenic organisms was so complete that there has been but little of value added to it since. He showed that if these organisms, especially the *staphylococcus pyogenes aureus*, are injected directly into the circulation of rabbits, there always results the appearance of miliary abscesses throughout the body, and that the kidneys are the organs most frequently and to the largest degree affected. It was his belief that the three pyogenic cocci, the *staphylococcus pyogenes aureus*, *albus*, and *citreus*, were modifications of the same organism.

With the publication of Passet's work the question involving the etiology of suppurative processes seemed for the time to have been effectually settled, and for a period following, the pyogenic cocci of Ogston, Rosenbach, and Passet were believed by most observers to be the specific agents concerned in the production of these conditions. With the more general application of bacteriological methods, however, and the study of the manifold conditions coming under the eye of the pathologist, the physician, and the surgeon, results were now and then obtained that did not accord with the view commonly held in regard to the specific relation of the pyogenic cocci to all forms of suppuration. Evidence began to accrue that pointed to the possibility of there being other organisms not grouped among the pyogenic bacteria which, under special conditions, could likewise produce in the tissues to which they had gained access conditions in all respects similar to those following the invasion of the specific pus-producing organisms.

So convincing is the evidence pointing to the relation of these organ-

isms to the suppurative processes in which they are found that Verneul<sup>9</sup> has suggested a classification of abscess-formations into those of a simple nature, those resulting from the presence of the ordinary pyogenic cocci in the tissues, and those of an "infectious nature," those occurring in the course of infectious diseases, and which in many instances are due to the activities of the specific causative element of the disease which is not normally pyogenic in its character.

The relation of these organisms, not normally pyogenic, cannot, however, be limited to abscess-production, for, as has been repeatedly seen, they may be concerned in the production of suppurative processes generally. A striking illustration of the manifold inflammatory conditions that may result from the presence of these organisms in the tissues, is afforded by some of the more recent contributions to the subject.

For example: The typhoid bacillus has been found by Welch<sup>10</sup> in pure culture in osteo-myelitis of the ribs following typhoid fever; by Destrée,<sup>11</sup> in acute purulent otitis complicating typhoid fever; by Raymond,<sup>12</sup> in pure culture in abscesses of the soft parts in the course of the same disease; by Valentini,<sup>13</sup> in pure culture in the pus of empyema accompanying typhoid fever; and by A. Fraenkel,<sup>14</sup> in the fibro-purulent deposit of a localized peritonitis occurring four and a half months after the appearance of typhoid fever. Upon the relation of this organism to the suppurative processes in which it is found, Orloff,<sup>15</sup> as a result of experimental studies bearing upon this point, expresses the opinion that, where it is present in pure culture it must be looked upon as the causative agent in the production of the process, and that the pathological condition is not in these cases a result of mixed infection as some suppose.

In twenty cases of acute peritonitis examined by A. Fraenkel,<sup>16</sup> the bacterium coli communis was found to be the only organism present in nine of them; Welch<sup>10</sup> found the same organism in pure culture in fifteen different inflammatory conditions; Veillon and Jayle<sup>17</sup> found it in pure culture in the pus of a liver abscess accompanying dysentery; Gilbert and Girode<sup>18</sup> found it in pure culture in two cases of purulent inflammation of the gall-bladder and ducts; and Tavel<sup>19</sup> detected it in a hæmatoma following upon operation for the enucleation of a cyst of the thyroid.

The diplococcus pneumoniae has likewise been found in pure culture in a variety of suppurative processes: in abscess of the soft parts, by Haegler;<sup>20</sup> in purulent infiltration of the tissues about a fracture of the ribs and of the hip, by Netter and Mariage;<sup>21</sup> by Steinhaus,<sup>22</sup> in purulent cerebro-spinal meningitis; by Picquet and Veillon,<sup>23</sup> in suppurative synovitis of the knee-joint; by A. Fraenkel,<sup>16</sup> in a case of acute peritonitis; by Zaufal,<sup>24</sup> in acute inflammation of the middle ear; and in acute fibrinous peritonitis, by Welch.<sup>10</sup>

Roswell Park<sup>25</sup> has detected the micrococcus tetragenous as the only organism present in an acute abscess; Kepper<sup>26</sup> has found the same organism in pure culture in an abscess of the soft parts about the lower jaw;



Karlinski<sup>27</sup> has seen it in pure culture six times in inflammations of different characters, and Steinhaus<sup>22</sup> believes it to be one of the causes of suppuration in man.

In addition to this the bacterium lactis aërogenes has been found twice in pure cultures in acute peritonitis; Senator<sup>28</sup> describes a bacillus not yet identified as the only organism present in the pus of a suppurating tonsil; Pellizari<sup>29</sup> found only the gonococcus of Neisser in three cases of periurethral abscess; Karlinski<sup>27</sup> found the bacillus pyogenes foetidus in three different inflammatory conditions, and Welch<sup>10</sup> detected in pure culture the bacillus pyogenes foetidus in an abscess containing bad-smelling pus; the proteus Zenkeri in an ovarian abscess with purulent salpingitis; a bacillus apparently identical with the bacillus emphysematis maligni of Wicklein in an emphysematous cellulitis of the arm; a bacillus apparently identical with the bacillus enteriditis of Gärtner in the brain and other organs of an infant three months old with cerebral abscesses and meningitis following operation for imperforate anus; a bacillus not identified in a case of peritonitis, and a bacillus that could not be cultivated upon our ordinary media in one case of suppurative inflammation.

In consideration of such evidence as this it is plain that we can no longer adhere rigidly to the opinions formerly held regarding the etiology of suppuration, for we are forced to admit that while the pyogenic cocci of Ogston, Rosenbach, and Passet are the most frequent causes of this condition, still they are not the only cause, for, as we have seen, there exist other bacteria not normally pyogenic which, under conditions not entirely clear, may give rise to tissue-changes indistinguishable from those produced by the ordinary pus-organisms.

In seeking an explanation for this somewhat confusing and unexpected condition of affairs we naturally endeavor to discover the circumstances under which organisms of an entirely different character that are not normally concerned in the production of suppuration may at times stand in direct causal relation to this process. As the earliest stage of spontaneous suppuration is characterized by a death of the tissues at and about the point occupied by the growing bacteria, it would seem reasonable to believe that there is a something produced by the bacteria in the course of their development that is directly detrimental to the tissues surrounding them; and we have abundant evidence in support of this opinion.

In endeavoring to study the relation between the necrotic conditions found and the substances believed to be concerned in their production, we find that these changes are not at all the specific results of bacterial poisons, but that they may be caused to occur from the presence in the tissues of substances that are in no way connected with bacteria or their life processes.

The well-known experiments of Councilman,<sup>30</sup> Uskoff,<sup>31</sup> Orthmann,<sup>32</sup> Dubler,<sup>33</sup> Grawitz,<sup>34</sup> Scheuerlen,<sup>35</sup> and many others since have demonstrated beyond doubt the possibility of producing suppurative processes, that are histologically and clinically identical with those of bacterial origin, by the sub-

cutaneous introduction of irritants into the tissues ; and careful examination of these abscesses shows them to be free from bacteria of any sort. Dubler (loc. cit., page 97) remarks in regard to abscesses produced by the introduction of irritants into the tissues that there is identically the same central area of necrosis and surrounding zone of inflammatory demarcation-tissue that are seen in abscesses of mycotic origin, and that throughout there is no marked difference between the two processes. If, as it appears to be, the conditions underlying the production of these changes are of a chemical nature, we then have a clue as to the means by which bacteria of an essentially different nature are concerned in the causation of the same process. Their products, though not of necessity similar chemically, possess, in common with irritants, a destructive action upon tissues with which they come in contact.

In recent times the chemical products of the growth of bacteria have been isolated and subjected to careful study, and it has been found that certain of them are poisons which, when separated from the bacteria by which they were formed, possess the power of causing tissue changes quite analogous to those following the growth of the bacteria themselves in the tissues, so that these poisonous albumins, albumoses, and toxalbumins, as they are called, have been held to be the means by which the invading organisms destroy the tissues and produce the pathological results.

Another stand-point from which the subject may be viewed is that brought out in the experiments of Buchner<sup>36</sup> and his pupils in Germany, which seem to demonstrate that the tissue changes characterizing these processes result less from the action of poisons produced by the growing bacteria than from the poisonous properties of the protoplasm of which the bacteria themselves are composed.

The question now arises : Why is it that one species of bacterium or one form of chemical compound does, while another does not, induce emigration of leucocytes with production of suppuration when introduced into the tissues of the living animal body ?

In regard to the emigration of leucocytes towards a point in the tissues at which foreign matters are deposited, it has been shown by Leber,<sup>37</sup> Mas-sart and Bordet,<sup>38</sup> and others, that in their relation to these substances the leucocytes follow the same general law of attraction and repulsion that Pfeffer has shown to govern the movements of motile bacteria when exposed to the influence of special chemical substances.

This singular and interesting phenomenon of chemotaxis, as it is called, is a peculiar relation that motile, living protoplasm is seen to bear toward certain substances of a chemical nature ; some chemical compounds attracting, others repelling the protoplasmic body.

In 1881 Engelmann<sup>39</sup> demonstrated the effect of light upon the movements of motile bacteria. Not only the rate of motion, but likewise the character, and direction in which the movements were made, were influenced by it. These results he believed to be due to alterations in the chemical



constitution of the medium in which the organisms were located, by the light to which it was exposed. He found also, under the influence of light, the effect of which was localized to definite parts of the fluid, that here there was, in particular cases, a production of oxygen as a result, and that the bacteria invariably moved themselves from the point in the fluid at which there was a scarcity of this gas to that where it was more abundant.

In 1887, Pfeffer<sup>40</sup> demonstrated the fact that motile bacteria, when subjected to the influence of chemical substances of different nature, were in some cases attracted towards it, and in other cases caused to retreat from it; in other words, the chemical body possessed a positive or a negative chemotactic affinity for these bacteria. Similar chemotactic affinities for foreign bodies are possessed by the leucocytes of the tissues in a high degree, and many substances, particularly those of bacterial origin, are claimed to possess constant positive or negative chemotactic affinities from these cells.

Leber,<sup>37</sup> Massart and Bordet,<sup>38</sup> and Gabritchevsky<sup>41</sup> have shown that an emigration of leucocytes with subsequent aggregation into suppurating foci, follows constantly the introduction into the tissues of materials possessing positive chemotactic affinities.

It is claimed by Buchner that the products of bacterial growth, the ptomaines, toxines, and toxalbumins, are only nerve-poisons with but little or no power of inducing emigration of leucocytes, whereas the bacterio-protein, the plasma contents of the bacterial cell itself, possesses this property in a high degree. He found that subcutaneous injection of a few milligrammes of the proteid material extracted from the body of the bacillus pyocyaneus produced a condition possessing all the clinical and pathological characteristics of an erysipelatous inflammation. He has isolated this bacterio-protein from seven different species of bacteria, and finds that in all cases subcutaneous injections of these substances are followed by the appearance of suppurative inflammations of varying degrees of intensity.

From studies that have been made upon the behavior of bacteria in the tissues we know that the result is frequently an emigration of leucocytes toward them, and it seems fair to assume that this induction of wandering cells with consequent formation of pus-points is the result in some cases of the positive chemotactic affinities of poisons eliminated by the growing bacteria, while in others it occurs where dead bacteria are undergoing disintegration and the poisonous activities of the proteids of which they themselves are composed are in operation.

I doubt if we are justified in recognizing, as Buchner would have us do, these two causative factors as distinct the one from the other. We are not as yet in a position to say definitely to which of these influences the death of the tissue is due, or indeed, that it is, when occurring spontaneously, the result of the action of the one to the exclusion of the other. For the present it would hardly be wise to make such a rigid distinction as suppuration occurring from poisons produced by living bacteria and that resulting

from the poisonous proteids of the bacteria themselves. There is no reason for believing that all the individual bacteria that may have gained access in one way or another to the tissues retain their vitality and are actively concerned in the suppuration that results from their presence; on the contrary, evidence favors the belief that in the conflict normally seen to occur between invading organisms and healthy tissues a fair proportion of the invaders are rendered inactive. In some instances all, in others only a portion of the invading organisms may be killed. In the former case infection fails; in the latter, the infection that results may be either complete or partial,—that is to say, there may be a true septicæmia with but little local reaction, or there may be an intense local suppuration with but slight evidence of general infection. In the latter condition it is reasonable to assume that both the poisonous products of growth of the living bacteria and the poisonous activities of the proteid constituents of the dead and disintegrating bacteria are together concerned in producing the primary local necrosis of the tissues and the subsequent accumulation of leucocytes about it.

A further support for the opinion that we are not justified in considering these two factors as etiologically distinct in the production of these processes is brought out in the experiments of Rodet and Courmont,<sup>42</sup> who found that animals normally refractory to infection by the pyogenic organisms would become constantly susceptible if the normal resistance of their tissues was first diminished or destroyed by injecting into them the soluble products of the growth of these bacteria as obtained from artificial cultures.

Another point of considerable significance in explaining the process is an observation commonly made in the course of experiments upon the typical septicæmias of lower animals. Among the pathogenic bacteria are certain species which when introduced into the tissues of susceptible animals under normal conditions result in the production of acute general infection with but slight visible reaction at or about the point of inoculation. Anthrax and the septicæmia resulting from inoculations with the diplococcus pneumoniae are conspicuous examples. In the course of this work, however, it not uncommonly occurs that there will arise conditions, with some of which we are acquainted, others not known to us, that influence either the resistance of the animal tissues and cause it to become increased in power or diminish the virulence of the organisms through degenerative changes in the protoplasm of which they are composed. Under these circumstances the results of inoculation are likely to be modified, and, instead of the usual relation between the number of bacteria in the blood of the animal—that is, the intensity of the general infection—and the local reaction at the seat of inoculation, there is a marked decrease in the general expression and an increase of the local condition, so that in these cases there may be at and about the seat of inoculation degrees of reaction extending from simple cedema to an intense, wide-spread, fibro-purulent infiltration.

After inoculation of susceptible animals with the bacillus of anthrax,



which normally produces a typical septicæmia, particularly in rabbits, there occurs at the seat of operation but little reaction other than an œdematous condition of the surrounding tissues, but if these organisms be subjected to influences that bring about degenerative changes in the protoplasm of which they are composed, with consequent attenuation of their normal virulence, their introduction into the tissues is commonly followed by local lesions that may be accompanied by suppuration, and but rarely or not at all by general infection.

Whether this local condition that is characterized by an emigration of leucocytes to the part at which bacteria are located indicates an effort on the part of the tissues to combat and prevent the inroads of disease-producing elements or not, it is impossible to say, but the fact remains that whenever it does occur, as a result of inoculation of organisms that under favorable conditions produce intense general infection, the general constitutional expressions are of much less intensity than where no such local reaction is present. Certainly there are causes at work in these conditions that attract the wandering cells of the body to a definite location, and this spot is the point at which foreign poisonous substances have been deposited. The variations in the intensity of these local processes that are seen to vary with the character of the agents employed, speak strongly for a direct connection between the effect found and what we believe to be the cause.

Welch<sup>10</sup> has called attention to that point, and cites in illustration the results of inoculation with the two varieties of the swine-plague bacillus, varieties that appear to represent modifications in the pathogenic powers of the same organism. Inoculations with one of these organisms result in death of the animal in from twelve to eighteen hours, with only slight local reaction and many organisms in the blood, while the other causes an extensive purulent infiltration at the point of inoculation with but few organisms in the blood. These differences, he believes, uphold the idea that the local condition expresses an effort on the part of the tissues toward resisting infection, and that the more intense and extensive the local reaction the fewer organisms, as a rule, are to be found in the blood,—that is to say, the less pronounced will be the process of general infection. In support of the same opinion it has been shown experimentally that, if animals are inoculated with the organisms concerned in the production of certain forms of acute septicæmia, and immediately following again inoculated at the same point with one of the organisms capable of producing a localized infiltration of leucocytes, no general septic condition will result. It is likewise a common experience, in experiments with certain of the organisms concerned in producing the so-called “hemorrhagic septicæmias,” that there does occur after inoculations with the same culture of the same organism in some cases typical general septicæmia with but little change at the seat of inoculation, in others an intense local condition with but limited general expression.

This relation between local and constitutional reaction is frequently to

be seen after subcutaneous inoculation of pigeons with the organism of chicken cholera. Normally the result is general septicæmia with trifling local manifestations. But now and then the degree of intensity of the general septicæmia may be extremely limited, while the point of inoculation may be marked by an extensive purulent infiltration of the tissues round about it.

If, as it seems reasonable to suppose, the local aggregation of leucocytes expresses an effort on the part of the tissue to prevent infection, we are justified in expecting, as a result of the combat, the destruction of a certain number of the invaders, and closer inspection of the local condition points to the accuracy of this belief.

Microscopic examination of the tissues at and about the point of inoculation, particularly where the local reaction is intense, always results in the detection of bacteria advanced in the stage of involution and degeneration, conditions resulting most probably from the detrimental influences of either the cells or fluids of the tissues in their effort to resist infection. This germicidal activity of the fluids of the body has been too much discussed in recent times to require rehearsal here; it suffices to say that it does occur and not only may be seen in the body of the living animal, but can be demonstrated in the serum from the blood of the animal outside of the body. This power, however, is apparently limited in degree and does not in every case result in complete destruction of all the invaders, unless the animal possesses absolute immunity against the pathogenic activities of the organisms employed. The conditions that have been cited appear to indicate a partially effectual effort on the part of the tissues to establish this refractory state.

Certainly there must be an explanation for the fact that organisms normally concerned in the production of acute, general, septic conditions may at one time run their normal course when introduced into the body of a susceptible animal, while at another their pathogenic activities find their most conspicuous expression in tissue-changes of a local suppurative character. These discrepancies seem to be best explained upon two grounds already mentioned; one of which assumes variations in the power of the tissues to resist invading organisms, while the other depends upon fluctuations in virulence and alterations in the ability of the invading organisms to overcome the tissues.

Where the organisms possess their full virulence the tissues of susceptible animals succumb and the general constitutional expression of the process results, but where from unfavorable surroundings the virulence of the organism is weakened, or, under conditions not known to us, the destructive activities of the tissues are increased, then a disintegration of the organisms at the point of inoculation is frequently seen. With this disintegration there occurs, as is now believed by some, an attraction of leucocytes towards the proteid substances set free from the bodies of the bacteria themselves, and a consequent establishment of a process of suppuration.



Time will not permit of my reviewing in detail the many contributions that have been made to this important subject. It suffices to say that studies, especially of Buchner<sup>36</sup> and his pupils in Germany and of Prudden and Hodenpyl<sup>43</sup> in this country, have proved that the substances comprising the bodies of certain bacterial cells—the bacterio-proteins—when introduced into the tissues, possess the property of attracting leucocytes toward them, a phenomenon so analogous to that observed by Pfeffer when motile bacteria were exposed to various chemical substances as in all probability to be identical with it; and, though this phenomenon of chemotaxis is as yet somewhat in obscurity, still it seems to be the source to which we must look for an explanation of certain of the undecided points in pathology, particularly the manifold conditions that underlie the production of suppuration.

From the evidence that has been presented to you in this paper it is plain that suppuration cannot be considered a specific process in the same way that tuberculosis, diphtheria, and anthrax are specific processes, but that the causes underlying it are manifold: in most cases being the result of the presence in the tissues of the common pyogenic cocci; frequently following the invasion of the tissues by organisms not normally pyogenic in character; produced experimentally by a variety of irritating substances without the presence of bacteria, and by the poisonous products of the growth of bacteria, and, finally, following the introduction into the tissues of the proteid substances that make up the body of the bacteria themselves.

<sup>1</sup> Rindfleisch, *Lehrb. der Pathol. Gewebelehre*, 1866, 1. Aufl., S. 204.

<sup>2</sup> Waldeyer, *Zur Pathol. Anatomie der Wundinfektionskrankheiten*, Virchow's Arch., Bd. xl., 1867.

<sup>3</sup> Von Recklinghausen, *Verh. der Würzb. Phys. Med. Ges.*, 1871.

<sup>4</sup> Klebs, *Beitr. zur Pathol. Anat. der Schusswunden*, Leipzig, 1872.

<sup>5</sup> Ogston, "Ueber Abscesse," *Langenbeck's Arch. für Klin. Chirurgie*, 1880, Bd. xxv.; *Brit. Med. Journal*, 1881; "Report upon Micro-Organisms in Surgical Diseases," *Journal of Anat. and Phys.*, 1882 and 1883, vols. xvi. and xvii.

<sup>6</sup> Rosenbach, "Die Mikroorganismen der Wundinfektionskrankheiten des Menschen," Wiesbaden, 1884.

<sup>7</sup> Passet, "Untersuchungen über die Ätiologie der Eiterigen Phlegmone der Menschen," Berlin, 1885.

<sup>8</sup> Koch, *Wundinfektionskrankheiten*, Leipzig, 1878. *Mittheil. a. d. Kais. Ges. Amts*, Bd. i.

<sup>9</sup> Verneul, *Comptes-rendus de l'Acad des Sci.*, 1888, t. cvii. pp. 461-467.

<sup>10</sup> Welch, "Conditions Underlying the Infection of Wounds." Paper of the referee read at the meeting of the Second Congress of American Physicians and Surgeons in Washington, D.C., September 22, 1891, *American Journal of the Medical Sciences* for November, 1891.

<sup>11</sup> Destrée, *Journal de Méd. de Bruxelles*, 1891.

<sup>12</sup> Raymond, *Gaz. Méd. de Paris*, 1891, No. 9, p. 97.

<sup>13</sup> Valentini, *Berliner Klin. Woch.*, 1889, No. 17.

<sup>14</sup> A. Fraenkel, *Verhandlungen des vi. Kongress für innere Medicin*, Wiesbaden, 1887, S. 173.

<sup>15</sup> Orloff, *Cent. f. Bact. und Parasitenkunde*, 1890, Bd. ix. S. 366.

- <sup>16</sup> A. Fraenkel, Wiener Klin. Woch., 1891, Nos. 13-15.
- <sup>17</sup> Veillon and Jayle, La Sem. Méd., 1891, No. 2.
- <sup>18</sup> Gilbert and Girode, La Sem. Méd., 1890, No. 58.
- <sup>19</sup> Tavel, Correspondenzbl. f. Schweizer Aerzte, 1889, No. 13.
- <sup>20</sup> Haegler, Fort. d. Med., 1890, No. 10.
- <sup>21</sup> Netter and Mariage, La Sem. Méd., 1890, No. 25.
- <sup>22</sup> Steinhaus, "Zur Etiologie der Eiterung," Zeit. für Hygiene, 1889, Bd. v. S. 518.
- <sup>23</sup> Picquet and Veillon, Arch. d Méd. Exp. et d'Anat. Path., 1891, No. 1.
- <sup>24</sup> Zaufal, Prager Med. Woch., 1889, No. 6.
- <sup>25</sup> Park, Medical News, October, 1888.
- <sup>26</sup> Kepper, Wiener Med. Presse, 1890, No. 27.
- <sup>27</sup> Karlinski, Cent. für Bact. u. Parasitenkunde, 1890, Bd. vii. S. 113.
- <sup>28</sup> Senator, Berliner Klin. Woch., 1888, No. 5, S. 77.
- <sup>29</sup> Pellizari, Centralbl. f. Allg. Path. und Path. Anat., 1890, No. 18-19.
- <sup>30</sup> Councilman, Virchow's Arch., 1883, Bd. xcii.
- <sup>31</sup> Uskoff, Virchow's Arch., Bd. lxxxvi.
- <sup>32</sup> Orthmann, Virchow's Arch., Bd. xc.
- <sup>33</sup> Dubler, "Ein Beitrag zur Lehre von der Eiterung," Basel, 1890.
- <sup>34</sup> Grawitz, Virchow's Arch., Bd. cviii. S. 67.
- <sup>35</sup> Scheuerlen, Forts. d. Med., 1887, No. 23.
- <sup>36</sup> Buchner, Berliner Klin. Woch., 1890, No. 20; Ebenda, 1890, No. 47; Centralbl. f. Chirurgie, 1890, No. 50.
- <sup>37</sup> Leber, Fortschritte d. Med., 1888, Bd. vi. No. 12.
- <sup>38</sup> Massart and Bordet, Centralbl. f. Bact. u. Parasitenkunde, 1890, Bd. viii. S. 56.
- <sup>39</sup> Engelmann, Pflüger Archiv. f. Phys., 1881, Bd. xxvi.; Ebenda, 1882, Bd. xxix.
- <sup>40</sup> Pfeffer, Unters. a. d. botan. Inst. in Tübingen, 1887, p. 582.
- <sup>41</sup> Gabritchevsky, Annales de l'Institut Pasteur, 1890, t. iv. p. 346.
- <sup>42</sup> Rodet and Courmont, La Province Méd., 1891, No. 12.
- <sup>43</sup> Prudden and Hodenpyl, New York Medical Journal, June 6 and 20, 1890.

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## THE TREATMENT OF PLEURISY IN THE PARIS HOSPITALS.

BY THOMAS LINN, M.D.,<sup>1</sup>

Nice, France.

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DR. MARCEL BAUDOUIN, adopting the American method of interviewing, has been asking the Paris hospital doctors what their treatment was in certain forms of disease. In pneumonia there was a great diversity of opinion, and in pleurisy, whilst a considerable difference of treatment was elicited, still there was a certain uniformity of ideas. In order to show the French therapeutical methods, we give a short account of the principal Paris hospital physicians' views on this subject. First of all, the larger number are convinced that the immense majority of these cases are of tuber-

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<sup>1</sup> Our special correspondent.



cular origin, and those that are not are frequently the result of the localization, in the pleura, of some form of microbic disease.

Professor Germain Sée, who was first seen, said that the very fact of the greater number of cases of pleurisy being of tubercular nature was enough to prove that the old-fashioned treatment by blisters, caustery points, or, in fact, by any form of revulsion, was useless. If vesication at any time seemed to be of value, it was simply because it happened to be applied when the effusion was becoming absorbed spontaneously. Dr. Germain Sée has no confidence in internal treatment, as he thinks that neither diuretics, purgatives, nor sudorifics can cause the fluid to disappear. He has lately made renewed experiments with antipyrin and salicylate of sodium, but he found that they do not have any such action as has been ascribed to them. Dr. Sée's patients are not forbidden liquids, and he believes in feeding them well so that they may have strength to resist the invasion of the bacilli. As to thoracocentesis, he thought that the aspiration should only be done when the effusion had become considerable in quantity, which would be about the twentieth day, or it might be delayed up to the thirtieth day, if there were no signs of dyspnoea.

Professor Hayem was of a contrary opinion as to internal treatment. He thought that the use of salicylate of sodium, or better *salol*, would diminish the effusion in quantity. He does not use vesication, but sometimes applies a solution of carbolic acid to the chest as a local revulsive agent.

Professor Straus and Dr. Lecorché were found to be both active partisans of the old methods of vesication.

Dr. Talamon thought that the only use of blisters was to keep the patient and the nurses or family occupied. As to aspiration, he applied it after five or six weeks' rest in bed did not cure the case. This year he had tried seven or eight of his patients with Liebreich's liquid (the cantharidate of potassium in doses of one three-hundredth of a grain by hypodermic injection). With this he succeeded in obtaining a considerable increase in the quantity of urine, but the elimination of fluid in this direction did not seem to have any effect on the liquid in the pleura. Since then he had taken up Anfrecht's treatment with salicylate of sodium, in doses of from sixty to one hundred grains per day, given for a week at a time. This medication had seemed to him to have an action on the reabsorption of the liquid. The best time to use it was from the fifteenth to the twentieth day of the disease.

Professor Dieulafoy said: "In pleurisy there are two important indications to meet with treatment, viz., pain and the effusion. As to the first, employ leeches, wet cups, hypodermic injections of morphinæ sulphas, or a small blister over its site. During this time give liquid foods, milk, soups, etc."

As to the effusion, Dr. Dieulafoy bases his action on the quantity of fluid, without regard to the time passed, or whether there be fever and dyspnoea or not. When the liquid rises to eighteen hundred grammes, which is determined by the physical signs, he at once draws off one thousand grammes

(about a quart). If then there is a decided improvement, he waits; if not, two days afterwards he evacuates another quart of the liquid; but at no time does he withdraw all the fluid at one sitting. The No. 2 needle of Dieulafoy's aspirator is the one he recommends, and the puncture should be made in the eighth intercostal space, on a line falling from the inferior angle of the scapula.

Dr. Henri Huchard remarked that there was nothing very new in the treatment of pleurisy. In the Bichat Hospital he puts them on milk-diet, and gives a potion of two and a half drachms of oxymel scillitic, with thirty or forty drops of the tincture of digitalis, to support the heart and favor diuresis. When the fever falls, he orders thoracocentesis, and, fearing eventual tuberculosis, gives food of the best quality and cod-liver oil, arsenic, and some small doses of the iodides.

Dr. Lancereaux was of opinion that pleurisy was a cyclic malady, like typhoid fever, small-pox, etc. The effusion begins after the first week, but is not complete until the end of the second, when, if the aspirator is used, it will rarely reproduce itself. The question of treatment, according to this clinical teacher, is determined by the answer to this question, What is needed to cause reabsorption of the pleural effusion? Why, simply, that the fluid should be taken up again by the lymphatic vessels. These are obstructed by clots caused by the inflammation. From this fact the treatment should follow; and at first a large blister can modify or even stop the phlegmasia. Later, however, when the obstruction to the lymphatics has been completed, vesication will be useless. All we have to do then is to look after the effusion and its consequences, which are syncope and asphyxia. To prevent the fainting keep the patient in bed, and as soon as the liquid becomes abundant perform thoracocentesis.

Dr. Dujardin-Beaumetz thought that most of these cases are simply secondary to tuberculosis, and he was in favor of large blisters, even during the later stages, when the fever had diminished. As to aspiration, he advised drawing off only a pint at a time.

Dr. Moutard-Martin uses applications of tincture of iodine on the painful side, and prescribes sulphate of quinine as an antipyretic.

Dr. Albert Robin sticks to the old treatment, with blisters, and gives one-fifteenth of a grain of calomel in four doses, one every hour. This he continues for three or four days; but if it causes too much diarrhoea, he replaces it by salicylate of sodium, thirty grains per day. He only uses thoracocentesis when the liquid has become extremely abundant.

Dr. Bucquoy says that he does not hesitate to put on eight to ten cups (wet) *loco dolenti*, and orders emeto-cathartics, with quinine and antipyrin. As to aspiration, he was in favor of withdrawing *all the liquid* after the fifteenth day. In this the Hôtel Dieu physician differs from those in other hospitals.

Dr. Olivier is physician to the Children's Hospital, and rarely has occasion to treat pleurisy in adults; but he was of the opinion that the method



he uses for children would do as well in older people. He provokes a sudorific action by putting a thick cotton-wool jacket around the chest, which he covers for two hours with oiled silk. The cotton is taken off twice a day, if it is saturated with perspiration, and the skin rubbed with a piece of warm flannel. With this some castor-oil is given and a strict milk diet.

Dr. Rigal finds that he is rarely called in the early stages of pleurisy; but when he is, he orders blisters and gives salicylate of sodium and milk treatment. In the fourth week he tries nitrate of pilocarpine, from one-eighteenth to one-twelfth of a grain by hypodermic injection, used every three or four days. This failing, he proceeds to aspirate almost all the liquid, which should be done *very slowly*, taking an hour and a half for two quarts.

Dr. Faisans was of the opinion that real acute pleurisy hardly existed at all nowadays, while the secondary cases do not need much, if any, treatment. The best thing that could be done was to judge of the quantity of liquid in the pleura and aspirate it.

Dr. Cuffer used the usual remedies, and only differed in his ideas of treatment after the acute attack was over; then he thought we should be careful to act against the formation of false membranes or adhesions by giving iodide of potassium in large doses, and continuing for a long time to use counter-irritants in the shape of cautery-points or tincture of iodine applications to the chest.

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## THE EYE-SYMPTOMS OF CEREBRO-SPINAL DISEASE.

BY EDWARD JACKSON, A.M., M.D.,

Professor of Diseases of the Eye in the Philadelphia Polyclinic, Surgeon to Wills Eye Hospital, etc.

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### PART II.—LOCALIZING SYMPTOMS.

CEREBRAL localization is very largely a matter of anatomy and physiology, of understanding the relations of the different nerve-tracts. We have in the brain and throughout the body nerve-tracts interlacing with each other, crossing each other; and we localize diseases by nerve-symptoms, by our knowledge of the paths along which certain nerve-impulses travel. A given nerve-impulse always travels the same path, and a second impulse has its especial path. If the functions which depend on the integrity of two paths of nerve-impulse are interfered with, the lesion must involve the point where they cross. And it is on our knowledge of the interlacing of nerve-paths that the whole matter of localizing any cerebral and spinal disease is to be based. Our knowledge of the anatomy and physiology of the brain and spinal cord in respect to the crossings and interlacings of nerve-paths is very imperfect. But it is better in regard to the parts concerned in

ophthalmic symptoms than in regard to others; and what we know about the eye-symptoms enables us, to some extent, to appreciate the extent and importance of the subject.

As the expression "nerve-paths" is here used, it includes the peripheral trunks, the bundles of commissural fibres between the various centres, and it also includes the centres themselves. Nerve-centres are, after all, to be regarded not as points at which impulses are originated absolutely *de novo*, but as resting-places upon the paths, or as junctions of many paths. I shall speak of centres for contraction of the pupil, for convergence of the visual axes, and for accommodation. It is not that every impulse to converge the visual axes starts from a certain fixed point primarily, but that all such impulses pass through that point. The impulse probably in the great mass of cases starts from somewhere else. It often has its origin in an idea or desire connected with other so-called higher centres, and may pass through many other "centres" before it reaches the centre which we recognize as the one for contraction of the pupil or convergence of the visual axes. Impulses starting from very different sources may come together at this one centre, and from it lead to the contraction of the pupils or the convergence of the visual axes. And so it is for other centres, for ocular movements, they are only the interlacing of nerve-tracts. The contraction of the pupil is a very good instance of an action produced by a nerve-centre. It is diminished by impulses which come from various parts of the body as an impression made on any sensory nerve is capable of causing dilatation of a normal pupil if the impression is sufficiently severe, so that this centre is simply a junction of many nerve-tracts.

We know that the various nerve-centres are connected one with another by commissural fibres, which resemble in function other nerve-fibres. These connections give rise to what are known as indirect or distant symptoms; and in this matter of localizing by ocular symptoms we must have a clear idea of the differences between direct and indirect symptoms.

*Direct symptoms* are those which are caused by direct lesions of the centre to which the symptom is referred. But in another case the centre to which the symptom is referred may be itself uninjured, but have its function affected by a lesion of some other centre in close connection with it, and thus give rise to what are known as *indirect symptoms*. This enormously complicates the problem of cerebral localization. It is impossible, at first sight, to discriminate between direct and indirect symptoms. Indirect symptoms are sometimes called *distant symptoms*, and that, perhaps, is as good a name as indirect. The direct symptoms may also be called *focal symptoms*, as they are often due to focal lesions. The matter of names is unimportant, if you grasp the idea.

The fact that certain centres are especially liable to manifest indirect symptoms makes the commonest symptoms of cerebral disease of little value for localizing purposes. One of the symptoms you will see referred to in most accounts of cerebral disease, either acute or chronic, one which is generally



mentioned now with more understanding than formerly, is the state of the pupil as regards dilatation or contraction.

*Dilatation of the pupil* furnishes a good illustration of the slight localizing value of indirect symptoms; in the great mass of cases it is practically of no value. The contraction of the pupil depends on a centre in the floor of the fourth ventricle on each side, and these centres are closely related to both optic tracts and with each other. But they are also closely related with other portions of the nervous system. It has been known for a long time that lesions of the upper part of the spinal cord, the cervical portion, were liable to affect the pupil, that irritative lesions at that point were liable to cause dilatation, and that paralyzing lesions brought about contraction of the pupil. But while myosis in connection with other symptoms indicating disease in the upper cord is a symptom of some value, the myosis by itself does not tell us anything at all, as it may be due to irritation of the contracting centre. Then the centre for pupillary contraction has wide cerebral connections, so that while contraction and dilatation of the pupil are met with in cerebral diseases, as in apoplexy or embolism, they are of no use in localizing the disease, as they occur with lesions in any part of the cerebrum, which by its connections may affect the size of the pupil as a distant symptom.

Another symptom which is quite frequently mentioned as present is the *conjugate deviation* of the eyes, the turning of both eyes to the right or left. It is quite a common symptom of cerebral disease, but gives us no knowledge of its location. Probably there is a centre which has to do with turning of the eyes to the right and another for turning them to the left, but we cannot yet locate those centres. It may be that cases occur in which those centres are affected by a focal lesion, but they are few and have not yet been recognized, while the cases in which these centres are acted on so as to cause distant symptoms of conjugate deviation to the right or left are numerous. Hence, as a localizing symptom, it is not of great value, though it may have significance in connection with other symptoms. If the lesion occurs in the pons, the eyes are turned towards the paralyzed side, or from the convulsed side; and if the reverse of this obtains, the lesion must be above the pons.

In view of this uncertainty about indirect and direct symptoms, how are we to know when a symptom has localizing value? Principally by the permanence of the symptoms. The symptoms I have mentioned—the alteration of the pupil and the deviation of the visual axes—do not last long. The conjugate deviation may be first one and then the other side, the pupil may be contracted and then dilate. Now when a symptom passes away quickly we know that it does not depend on a focal lesion of the part to which that symptom is referred. Of course, we might have a slight congestion of a centre, principally a functional condition, which might soon pass off; in fact distant symptoms do arise from such a functional involvement of the centre; but what we are searching for in cerebral localization is

the grave organic lesion which sets up such functional derangement, and that lesion implies permanent symptoms. Symptoms are of localizing value when they are permanent. Those which last for a few days or hours, and pass away and return in a few more days or hours, are indirect symptoms, and are of little localizing value.

The cortical centres for eye-movements differ from certain other cortical centres in that they are centres for *associated movements*: you know we have in a certain part of the third frontal convolution a centre for the movement of a certain part of the body, the hand, and further on a centre for the arm and shoulder muscles, and in another portion of the same convolution we have a distinct centre for the movements of the leg. Here we have certain groups of nerve-cells presiding over the actions of certain muscles. Ocular movements are not so represented in the cerebral centres. We have no cerebral centre for a certain muscle, as the external rectus of the right eye. But we have centres for associated movement. We have a centre for the conjugate movement of the eyes to the right, another for their associated movement to the left. These we cannot fix with any certainty. But we have other centres which we can locate better. There is a centre for vertical movements, which is probably situated on the posterior surface of the pons. And this centre for associated movement has to do with both the superior and the inferior rectus muscles of both eyes, so it is not a centre for one particular muscle, but for certain movements.

Abnormal associated movements always indicate at least that it is some portion of the nerve-centres and not the nerve-trunks that is involved. A centre for associated movements to the right must act through the sixth nerve to the right external rectus, and through the third nerve to the left internal rectus, and the loss of such power may occur without affecting the other actions of the third and sixth nerves at all.

There is one of these centres for associated movements which is pretty well localized, the one for the three acts of accommodation, convergence, and contraction of the pupil. It is probably a composite centre, consisting of three closely-allied centres. The convergence of the eyes is not affected when sensory nerves are stimulated throughout the body. Abnormal accommodation does not follow from lesions of the cord. And although dilatation of the pupil may occur in many conditions, if we find dilatation of the pupil and paralysis of convergence and paralysis of accommodation, we can, if the symptom persists, localize with great certainty a lesion in the floor of the fourth ventricle, at the centre for these three acts.

**HEMIANOPSIA.**—More interesting symptoms are those connected with partial or complete blindness. In order to understand them it is well to keep in mind an outline of the anatomy of the optic tracts.

Starting from the right half of the right retina you have the impulses passing back through the optic nerve into the optic tract, and thence back to the centre in the right occipital lobe,—just which part of the occipital lobe is concerned in color and in form vision is in dispute, but the centres



are certainly located there. In the left eye from the corresponding half of the retina,—that is, from the right half,—the impulses pass back in the nerve to the chiasm, where they cross to the right side and continue backward through the right tract to the right occipital lobe. From the left half of the right retina you have impulses crossing through the chiasm, in the same way, to the left tract and left occipital lobe. Now this is analogous to what we find in many of the lower animals. You know man uses both eyes to see to the right, and both eyes to see to the left. In the lower animals, where the eye is more to the side of the head, the right eye sees to the right and the left eye sees to the left, and there is a complete decussation at the chiasm, so that the right half of the brain sees objects to the left, and the left occipital lobe sees objects to the right.

A single lesion, to cause complete blindness of one eye, must be in the eye itself or somewhere in front of the chiasm. It is only in the optic nerve, in front of the chiasm, that all the nerve-fibres concerned in the vision of that eye are gathered together.

Lesions of the chiasm itself, when sufficiently localized to involve simply the decussating fibres, will cause blindness of the inner or nasal parts of both retinas, and this will cause blindness in the temporal portion of the field of vision of both eyes. Bitemporal hemianopsia fixes the lesion in the chiasm.

A lesion anywhere back of the chiasm involving one optic tract causes homonymous hemianopsia. For instance, on the left side it involves fibres going to the left half of each retina, causing blindness of the right half of each visual field. It is of considerable importance to know the fact that hemianopsia is very rarely an indirect symptom. Brief hemiamblyopia occurs rather frequently as a symptom of probably a functional affection of the centres themselves, or possibly some part of the tracts. Such is the character of the “ophthalmic megrim” that marks the beginning of many attacks of sick-headache.

In connection with hemianopsia, the reaction of the pupil to light is often of great importance as a localizing symptom in practical work. The tract involved in the production of the light reflex is the retina, the optic nerve, and optic tract to the corpora quadrigemina, where, through Meynert's fibres, it communicates with the centre for pupillary contraction. Thence it passes by the oculo-motor nerve to the pupil. In order to have the light reflex, this whole circuit must be in perfect condition. Hemianopsia may occur from a lesion of the visual tract anywhere back of the chiasm. If the lesion be situated in front of the point at which the visual tract is connected with the centre for contraction of the pupil, reaction of the pupil to light cannot occur. If the lesion is situated back of that point, the reaction of the pupil is normal.

In a case recently seen at the Philadelphia Polyclinic there was hemianopsia, but the reaction of the pupil was perfect; when a feeble light was thrown on the blind part of the retina, the pupil promptly contracted.

Hence the lesion must have been situated in the brain, back of the corpora quadrigemina. And in this particular case, as there were no other focal symptoms, the lesion probably affected the cortical centre, for if it had been at the sensory crossing at the back part of the internal capsule there would probably have been hemianæsthesia. From the fact that there was simply absolute hemianopsia, with reflex contraction of the pupil to light thrown on the blind half of the retina, we could confidently localize the lesion in the occipital lobe.

In another case which we had in the Polyclinic Hospital there was optic neuritis, which declared some gross brain-lesion, and the history pointed to a tumor. The man came to the city for the removal of the tumor. But there was complete failure of the pupil to react to light thrown on the blind half of the retina, although it contracted normally when light was thrown on the other half of the retina. This was taken as proving that the lesion involved one optic tract in front of the corpora quadrigemina. This single sign, locating the lesion at the base of the brain, where it would be quite inaccessible, negated the idea of an operation. The majority of these limitations of the visual field strictly deserve the name hemianopsia, there being absolute half-blindness not only for form, but for light-perception and color, except that the line of demarcation curves to the blind side, leaving the fixation-point unaffected.

Sometimes the lesion is of more limited extent, and, instead of having the visual field limited as in hemianopsia, only a certain portion of the half-field is lost. In a case of apoplexy, seen recently, there was absolute blindness, involving homonymous segments of less than one-quarter of each visual field. Then there are other cases on record in which somewhat more than one-quarter of each visual field was lost. The mass of these cases point in the direction of the cerebral cortex as the seat of the lesion, although a case, observed by Dr. Wm. F. Norris, presented temporarily, in the earlier stages, such a defect of the field, where the lesion was found to involve the optic tract.

In another group of cases, which is very small so far, there is half-blindness for color, *hemichromatopsia*. The field for form is perfect, but on one side of the field colors cannot be recognized at all. This kind of hemianopsia also points pretty certainly to a lesion in a portion of the occipital lobe. There are certain cases, too, which indicate that the macula is represented in a special portion of the cerebral cortex, and that it may escape when all other parts of the retina are blind. But this centre we cannot localize with certainty except that it is in the occipital lobe, and probably near the other centres concerned in vision.

Of extreme interest are the symptoms of *mind-blindness*, in which, with perfect sight, there is inability to remember or recognize familiar objects. *Alexia*, or word-blindness, which is perhaps a form of mind-blindness, the word being seen but not recognized, and *dyslexia*, in which the patient can see and recognize words, but does so only with great diffi-



culty, and after reading a few, throws aside the book, and cannot be induced to continue his reading, are extremely interesting conditions which are likely to escape notice if the physician do not fully understand their significance.

These give you some idea of the vastness of this subject of cerebral localization. Here we have only dealt with the visual function of the brain, and when we come to apply methods of the same exactness to the functions and distributions of other parts of the nervous system, the results will be of enormous value. For the importance of cerebral localization grows by the addition of new facts in a geometrical progression. Each new symptom multiplies the value of symptoms previously known.

Every new localizing symptom is not only of importance in itself alone, but of still greater importance taken in connection with others. As the significance of hemianopsia is enormously increased by our knowledge of the reaction of the pupil, the greater the number of focal symptoms we get, the greater the number of combinations we can make with them. Of all cases of localized cerebral disease probably a comparatively small number are subject to careful study at the hands of the specialist. There is here a rich field for original research for any one who will carefully study his cases, bearing in mind the general principles of cerebral localization, the anatomy of the brain and cerebral nerves, as far as this is worked out, conscientiously recording symptoms, and completing the case where possible by an autopsy, and submitting the diseased structure to a skilled pathologist.

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### *BIPOLAR FARADIZATION IN DILATATION OF THE STOMACH, AND IN CONSTIPATION DUE TO IMPAIRED INTESTINAL PERISTALSIS.*

BY A. D. ROCKWELL, A.M., M.D.,  
New York.

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IN a recent article I considered in some detail the subject of the "Different Physiological and Therapeutical Properties of the Induced Currents of Electricity with Especial Reference to Bipolar Faradization,"<sup>1</sup> and in a somewhat general way discussed the value of these different qualities of currents, and the indications for their use.

Gynæcological electro-therapeutics has been the special field for experimentation with the induced currents of quantity and tension by the bipolar method, and their value in this class of cases is beginning in some degree to be understood, but the value of currents of quantity and the superiority of bipolar over unipolar faradization in some of the diseases of the alimentary canal is little appreciated.

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<sup>1</sup> New York Medical Record, February 14, 1891.

The efficacy of electricity in chronic dilatation of the stomach depends manifestly very much upon the cause. Unfortunately the etiology of this condition is too frequently dependent upon diseases that are beyond the reach of either medical or surgical interference. Cancers, fibroid thickenings, and ulcers, for all of which electricity is of doubtful value, are the frequent causes of dilatation. Other causes, by no means unknown, are paralysis of the muscular walls of the stomach and chronic catarrhal gastritis, both of which clearly indicate electrical treatment.

Following catarrhal gastritis, dilatation comes on very gradually, accompanied by comparatively little pain, but with sensations of weight and fulness that cause great discomfort.

Ordinarily it is not difficult to diagnosticate a dilated stomach. The abdomen is irregularly distended, and a tympanitic sound is elicited over a wide area. The left side of the abdomen is fuller than normal, and in very thin persons it is said that the vermicular motion of the organ may be distinctly seen and felt.

The following case illustrates not only the symptoms that may exist in connection with dilatation of the stomach following chronic gastric catarrh, but the part played by electricity in its treatment.

The patient, a gentleman aged forty, gave the following history :

Some five years ago he had an attack of acute gastritis, from the effects of which he never entirely recovered, although for two years after the attack he was very much better than he has been latterly. Three years ago he began to experience an unusual amount of acidity accompanied by a burning sensation that extended from the stomach to the throat. Stimulants were recommended, but only afforded temporary relief. The patient compared the sensations in his stomach to the process of fermentation, and while nausea was not a common symptom he would occasionally be attacked with severe paroxysms of vomiting, after which he would feel greatly relieved for several days. The acid eructations were especially distressing and difficult to relieve, from the fact that his appetite was at times voracious. His powers of assimilation, however, were impaired to such a degree that he became greatly emaciated and physically exhausted.

The bowels were obstinately constipated and the urine was loaded with lithates. An examination of the abdomen revealed some of the characteristic features of the disease.

The upper curvature of the stomach and the left side of the abdomen were more prominent than normal, while the epigastrium was depressed. Percussion readily elicited the tympanitic sound, even after the ingestion of food, but resonance was extreme an hour or so after vomiting. In the treatment of this case, remedies other than electricity were employed, but the latter therapeutic means constituted the main reliance, from the fact that the other methods of treatment, including washing out the stomach, had been persistently tried without benefit.

It was evident that the indications in this case were mainly two: First, to restore proper tone to the overworked and exhausted gastric muscles; and, second, to give tone and strength to the general system. To accomplish the first object, applications directly to the interior of the stomach were attempted, and this was rendered the less difficult from the fact that the



patient had become quite expert in introducing a tube and washing out the stomach himself. I did not use the ordinary unipolar, but the double-bulbed bipolar electrode, illustrated in Fig. 1, which I devised for such applications to the stomach.

The single-bulbed electrode (Fig. 2) is, as a rule, introduced with less difficulty, but the double-bulbed electrode is superior to the other for these

FIG. 1.



Bipolar stomachal electrode (double bulb).

FIG. 2.



Bipolar stomachal electrode (single bulb).

applications, and in this case was introduced without the slightest trouble and with but little inconvenience to the patient.

As a matter of precaution I employed the faradic current of tension, but because of its inefficient action when used in this way, and partly perhaps because of the greatly lessened sensibility of the organ itself, after two weeks of trial I abandoned it for the induced current of quantity. I may say in passing that I did not anticipate satisfactory results from its use, but tried it in order to satisfy myself as to the relative efficiency of induced currents of quantity and tension by the method of bipolar faradization when applied directly to the stomach. I wished to determine whether the same differences were observable in the action of the two qualities of current as when applied to the uterus and vagina. The only effect that could be regarded as at all beneficial was a little less acidity and decreased burning sensation at the

cardiac orifice of the stomach and along the œsophagus. The current that I now used was of such slight tension that when passed through the hands of the patient it caused but slight sensation and no perceptible muscular contractions.

Localized, however, through the bipolar electrode pressed directly against the inner surface of the stomach, the effects were immediate and positive. Not only was more or less pain experienced, but there was an evident contraction of the muscular tissues of the stomach.

These supposed contractions were not visible, but the patient compared the sensation to that of vigorous contraction. It was not possible as in the use of currents of tension to greatly increase the strength of the current.

What was painful in the beginning continued painful throughout the application. The results of these local applications administered almost daily, and combined with general faradization, were in this case of the most encouraging character. A considerable time elapsed before the patient even approximately recovered the normal tone of his stomach, but his symptoms began to amend immediately. The most marked and grateful relief, of which the patient could not speak too often, was the disappearance of that feeling of intense heaviness of the stomach associated with a sensation as if its contents were undergoing fermentation. The vomiting also soon ceased, and the appetite, which at times was so voracious that he found it all but impossible to control, gradually became quite normal. Improvement in strength and flesh continued, until, at the end of three months, the patient had increased in weight from one hundred and seventeen to one hundred and forty-five pounds.

The peristaltic action of the intestines may be greatly impaired or entirely lost through a variety of causes. The nervous system may be at fault; the muscular fibres of the intestines gradually losing their contractile power from defective innervation.

From the fact that there are no recorded observations indicating structural changes in the nerves supplying the muscular coats of the intestines, or their intrinsic ganglia, it is fair to conclude that the defective innervation, referred to above, is either entirely functional in character or due to some disease of the central nervous system that interferes with the function of the vagi. It is entirely probable, also, that disease of the spinal cord may produce intestinal paralysis.

Impaired intestinal peristalsis, however, is probably more often the result of damage to the muscular tissues, the causes of which are manifold. Granular changes take place in the muscular fibres during the progress of inflammation of the mucous or serous coats of the intestines. The frequent and injudicious use of powerful purgative medicines is a very common cause of paralysis of the peristaltic movements of the intestinal tract. So also is prolonged dilatation, the result of retained fæces. Besides these there are constitutional causes that act as potent factors in weakening the irritability of the muscular tissue. Constipation as a sequel of various



acute diseases is by no means uncommon, a condition which is simply the expression of a diminished peristaltic action.

Typho-malarial fever, diphtheria, violent attacks of hysteria, and an imperfect nutrition for lack of proper food,—all result in a depreciation of the tone of the nervous and muscular system, which in some cases very seriously interferes with peristaltic movements. In a certain proportion of cases of this character, electricity is of positive service, accomplishing more perhaps than most other methods of treatment.

FIG. 3.



Bipolar rectal electrode (double bulb).

FIG. 4.



Bipolar rectal electrode (single bulb).

Both the galvanic and faradic currents may be used, but my preference is for the faradic. Its powerful mechanical and limited reflex effects seem to be better adapted to restore the impaired irritability of the muscular nerve-supply. In the intestinal paralysis, due to distention from retained fæces or from the action of powerful cathartics, the best results are obtained by applications sometimes by the unipolar, sometimes by the bipolar method (Figs. 3 and 4).

By the unipolar method, one pole—preferably the anode—is introduced into the rectum while the other is applied externally to every part of the abdomen, as well as to the dorsal and lumbar regions. If the galvanic current is employed the cathode should invariably be placed internally. The strength

of the current should hardly exceed three or four milliampères, even when used with interruptions, but when used continuously one or at most two milliampères are amply sufficient. Contrary to what is a common observation when applied externally, the galvanic current when applied internally is followed by muscular contractions at the breaking and not the closing of the circuit. This is a phenomenon entirely subjective, and in order to appreciate it one must try the experiment in his own person and make use of an exceedingly weak current,—not more than one or two milliampères in strength. If it much exceeds this the order of the contractions will be directly reversed. The strength of the faradic current may be safely left to the sensations of the patient. To those who understand the exceedingly powerful influence of an induction current of quantity, when applied to surfaces that offer little resistance to its passage, it is at once evident that it is to be greatly preferred to currents of tension in exciting intestinal muscular contractions, especially of the colon and rectum. In order that the resistance may be reduced to its minimum, both poles should be introduced into the bowel, using for this purpose the bipolar electrode, the two forms of which are illustrated in Figs. 3 and 4.

Induction currents of high tension when applied to mucous surfaces act mildly both on motor and sensory nerves. Indeed, so tolerant do these parts soon become to such a current that even when the strength is very great the patient may be entirely unconscious of its passage. The induction current of quantity, on the contrary, requires the exercise of the greatest caution. Excessive pain is occasioned by even a seemingly weak current, and the parts do not become tolerant to its influence as the application continues.

In the application of these currents of quantity to mucous surfaces by the bipolar method a rheostat should invariably be used. Even with the minimum of current yielded, the closing of the circuit is attended by an exceedingly disagreeable and even painful sensation, and the only way to obviate this, in the ordinary faradic apparatus, is by the use of this instrument of precision. This necessity does not, of course, apply to the apparatus supplied with detached and sliding coils.

Impaired peristaltic action dependent upon constitutional conditions the result of either acute or chronic disease frequently demands more than mere local treatment.

In addition to local treatment with the induction currents of quantity, general faradization is beyond all question productive in many instances of the most beneficial results. For this purpose currents of comparatively high tension are required.



# CLINICAL LECTURES.

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## *CONGENITAL CYANOSIS.*

CLINICAL LECTURE DELIVERED AT THE HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA.

BY WILLIAM PEPPER, M.D., LL.D.,

Provost and Professor of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania.

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GENTLEMEN,—This boy, nine years of age, is brought by his mother with the following story: He is the youngest of three children. The father and mother are both living, and healthy. There is no known hereditary tendency to disease on either side. The older children are respectively sixteen and fourteen years of age, and are healthy. The mother states that she was in her usual health when she conceived this child, but during her pregnancy, according to her statement, she was not as strong as she should have been. Her husband had diphtheria, and she nursed him. Then she had fainting spells, as she calls them, “would drop off, almost, eyes roll up, fall back, and recover herself in a moment.” She did not actually fall unconscious in any of the attacks. In addition to these, she had falling spells. Frequently during her pregnancy she would find herself on the floor, or on the pavement in the yard. She does not know that she ever injured herself in any of these falls. These syncopal attacks and frequent spells of falling, I take it, were indicative of cerebral and circulatory weakness. Whether this had or had not any effect on the foetus cannot be positively asserted. This is true, however, that the child was born at full term, with a natural labor, and, when born, seemed to be a perfectly healthy baby. The only thing noted was that it was feeble in crying, but it nursed and grew well. When fifteen days old, the mother noticed that its face, and also the hands, suddenly turned blue. There was general cyanosis. This continued for an hour. Her physician directed that the child should be kept on the right side. The blue color did not again appear until the child was six months old. It then again became blue, and has remained more or less blue ever since. At times the cyanosis is much worse. When he gets excited he turns very blue and becomes short of breath. In cold weather it is much worse than in warm weather. It is difficult to keep him warm, and he takes cold very easily. In addition, he has had five attacks of hæmoptysis, and the blood expectorated is noted as being unusually

dark. It is not florid, and not thoroughly aerated. It is often coagulated, so much so that the mother, on one occasion, was obliged to draw it from the throat with the finger. This is quite unlike what we usually see in hæmoptysis. It is further stated that each time before the occurrence of a spell of bleeding, there have been for several days distinct choreic movements.

The child, then, presents the general history of cyanosis, which, as you know, is but the imperfect oxidation of the blood. We may speak of a patient with any affection, as, for instance, pneumonia, where the breathing is much obstructed, as having cyanotic symptoms, lividity of the lips, blueness of the finger-tips, and a dusky hue of the whole face, but when we say that a child has cyanosis, we mean something more than merely cyanotic symptoms, which may attend any condition that interferes seriously with respiration. It means that the child has some organic lesion, which brings about a permanent state of imperfect oxidation of the blood, usually connected with an admixture of the venous and arterial blood, owing to some morbid communication between the two sides of the heart. As this abnormal communication between the two sides of the heart can only come from some defect in the structure of the organ, cyanosis must be a congenital affection. An adult may get obstructive disease of the heart, either aortic or mitral, and become cyanotic, but we do not speak of that as the entity,—cyanosis,—as a distinct disease. We restrict the term to the congenital disease due to defect in the central organ of circulation.

The symptoms of such a condition are, that the child is badly nourished, and rarely grows rapidly; that he is chilled easily, needs heavy clothing, loves warm rooms, and dreads exposure; that he is easily made sick by changes of weather, and is very liable to congestion and catarrhs. As the oxidation of the blood is defective, he cannot exert himself without bringing on dyspnoea, so that slight excitement and exertion cause disturbed action of the heart, with severe shortness of breath. The natural color is changed, especially where mucous surfaces are exposed. There is lividity of the lips and a purplish hue of the mucous membranes, and an unnatural dark-red color of the tongue. The blue color is marked in the dependent parts of the body, as the fingers. The finger-tips become bulbous as a result of the distention of the capillaries and the habitual congestion of the parts. Bulbous finger-tips are met with in other conditions where there is long-standing interference with respiration and circulation, as in emphysema, obstructive heart-disease, and in phthisis; but in these conditions it is rarely so conspicuous as in young children with cyanosis. It is extremely marked in the present case.

This child presents all these symptoms, and in addition he has had a symptom which is not so common,—that is, hemorrhage. Cyanotic children do not very often bleed. It is dependent upon the damming back of the blood on the lungs, impeded in its circulation through the ill-formed heart. From some temporary cause, there is added obstruction, the pulmo-



nary vessels become over-engorged and hemorrhage occurs. I may add that the whole circulatory system is sometimes found to be imperfectly developed, which might favor the occurrence of hemorrhage. The connection of the hemorrhage in this case with preceding choreic symptoms is a peculiar feature. It may be that the local congestion which preceded the hemorrhage caused such reflex nervous irritation as to excite choreic symptoms.

When we inquire what lesions of the heart would cause such abnormal communication between the two sides of the organ, your knowledge of anatomy will instruct you in a moment. The simplest case is where the two auricles communicate with each other through the foramen ovale, which is not closed in the course of a few days after birth, as it normally should be, but remains as a permanent communication between the right and the left auricles, permitting a commingling of the venous and arterial blood. It was on this account that the physician who first saw the child directed that he should be kept on the right side, for in that position gravity would favor the closure of the opening. This seemed to answer very well for a time while the child was quiet, for no spell indicating free communication took place until the child was six months old, and better able to move himself. It is probable that the valve had not become attached, and intercommunication again occurred and severe attacks of blueness followed.

The exact lesion in these cases depends largely upon the time at which the arrest of development occurs. If it occurs at an early period of foetal life before the septum between the ventricles is completely formed, there may be a permanent communication between the two ventricles. I have seen the opening so large as to involve one-third of the interventricular septum, and again so small as to scarcely admit the tip of the little finger. The mischief in these cases is the result of an endocarditis set up by some cause. We have as yet no very clear idea of what sets up endocarditis in the foetus. Sometimes it seems to be the result of syphilis, but there is no suspicion of that in this case. It may be due to rheumatism, but, although I have studied many cases of malformation of the heart, I have failed in most of them to find any rheumatic diathesis or to find after the birth of the child the usual symptoms of rheumatism. This child has not had any such tendency. The mother did not have rheumatism while carrying the child. There is no history of rheumatism on the maternal or paternal side. In studying these cases it has seemed to me that an injury or blow resulting from a fall or severe nervous shock experienced by the mother, by which her nutrition was violently and suddenly influenced, was the most common determining cause of congenital malformation, not only of the heart, but also of other parts of the body. It is somewhat significant that this mother had symptoms of great circulatory weakness, and that she fell frequently. I cannot demonstrate any connection between this and the cyanosis in the child. I simply mention it for what it is worth. However this may be, what is set up in the heart is an endocarditis which results in thickening from cellular proliferation, forming a dense white membrane

which, of course, checks growth in the muscular fibre under it. If this occurs at the orifice of one of the vessels, or at one of the auriculo-ventricular openings, it leads to puckering, contraction, and obstruction. The results of this foetal endocarditis are, therefore, thickening of the endocardium, impairing the development of the muscular tissue underneath, or obstruction at the auriculo-ventricular openings or at the orifices of the vessels that leave the heart.

It is a further interesting fact that during foetal life we find the right side more frequently the seat of disease than the left. In after-life the rule is reversed, and the left side is more commonly the seat of disease. In foetal life it is the tricuspid and pulmonary valves that are more usually involved, although the mitral and aortic valves may also be affected.

The consequences of these lesions are easy to see. Take for instance endocarditis involving the tricuspid valve and causing thickening of the leaflets and obstruction to the flow of blood from the auricle to the ventricle. This, of course, would tend to prevent closure of the foramen ovale, and indeed under these circumstances this is the only safeguard for the child. If the tricuspid orifice were the only part affected, the open foramen might be the only lesion that would follow. If the foramen were large enough and the tricuspid not too much obstructed, the child might develop fairly well, showing only a moderate amount of cyanosis. Unfortunately, however, it is found that rarely does the pulmonary-artery valve escape. There is often some obstruction at this point also, so that the right ventricle has difficulty in emptying itself. Then a more serious condition of affairs is present. If this endocarditis and obstruction occur before the interventricular septum is completed, there is poor chance for its closure. Frequently, also, the endocarditis attacks the septum, and there are thickening and induration of the endocardium, the result of interstitial change, interfering with the growth of the muscular tissue. We then have the development of the septum arrested, the pulmonary orifice obstructed, the tricuspid valve affected, and the foramen ovale patulous. The blood in the right auricle escapes partly into the left auricle, mixing with the red blood there, and partly passes into the right ventricle, but, as the ventricle cannot discharge the blood promptly through the obstructed pulmonary orifice, part of it is forced into the left ventricle through the opening in the septum, and thus we have a double communication.

In many of the specimens there is found another lesion. The obstruction at the pulmonary orifice has been so serious that the lungs could not get enough blood through the pulmonary artery to supply the needs of the system after the child is born, and the lungs expand, and a large amount of blood is drawn into them. In the foetus, as you know, there is in the ductus arteriosus a communication between the pulmonary artery and the arch of the aorta. This is patulous when the child is born, but normally, when the lungs expand and a strong current of blood is drawn through the pulmonary artery, it contracts and soon becomes occluded, remaining



as a fibrous cord connecting the arch of the aorta to the point of bifurcation of the pulmonary artery. In cases where the pulmonary artery is greatly obstructed, the amount of blood which reaches the lungs through this channel is insufficient, and the remainder is drawn from the aorta through the ductus arteriosus, which then remains permanently open.

This, then, is the fully-developed congenital malformation associated with cyanosis. As we have seen, there may be only one lesion, the open foramen ovale; or this may be combined with the tricuspid and pulmonary lesion, and with the persistent ductus arteriosus.

The physical signs connected with such lesions are generally clear enough to be recognized and to aid greatly in the diagnosis. If the lesion is of marked degree, the heart becomes rounded in shape and the impulse is extended, especially towards the right. This is due to the dilated hypertrophy of the right ventricle. The auricles also are apt to be dilated, and especially the right auricle, if there be tricuspid stenosis. In this child the apex-beat of the heart is at the left border of the sternum, in the sixth interspace. There is a diffused impulse, which is much more extended than normal. There is also a slight thrill, systolic or presystolic, in time. The area of cardiac dulness begins at the third rib and extends to the sixth interspace, but in the transverse direction the increase is the greater. The dulness begins three-fourths of an inch inside of the left nipple-line, and extends one-half inch beyond the right border of the sternum. The impulse of the distended right auricle can be felt at the right edge of the sternum.

A murmur may be produced by any of the lesions which I have mentioned, with the exception of the ductus arteriosus. These murmurs do not usually correspond with those which we find associated with cardiac disease developing after birth. They are often diffused and difficult to time. Even when the point of maximum intensity can be fixed as indicating probably the seat of lesion, the propagation of the murmur is apt to be irregular.

In the present case the cardiac sounds are abnormal. There is marked accentuation of the aortic element of the second sound, connected with greatly-increased aortic tension. There is also a partial reduplication of the second sound. All the sounds are blurred, as though the two sides of the heart did not contract synchronously. There is, however, no distinct blowing murmur constantly heard. Occasionally a murmur difficult to time is heard quite plainly at the base of the heart and about mid-sternum. It is not at all propagated into the aorta and great vessels. It would seem to be produced either at the tricuspid orifice or at the foramen ovale. I cannot help hoping that the absence of more decided murmur and the comparatively moderate degree of cyanosis indicate that a patulous foramen ovale may be the chief permanent lesion associated with only a moderate degree of pulmonary stenosis.

The history of these cases is usually that they develop to a certain point and not beyond. They become so susceptible to external influences that

sooner or later some intercurrent disease, often phthisis, carries the patient off. At other times they fall into a condition of wasting and progressive malnutrition. This child, I think, is a hopeful case. I am glad to find no strong murmur, and I am glad that the patient gets relief by pulmonary hemorrhage from time to time. I consider this a favorable feature. The child is growing and the circulation is fairly maintained. Although existence in this condition is a doubtful enjoyment to the individual and a terrible care to those who watch over him, yet my impression is that the child may live a long time. Our attempts will be directed solely to the protection of the child by hygienic measures from the risks of intercurrent disease, and we shall give the mother detailed directions with reference to dress, rest, exercise, etc., and have the child brought back in the course of a few months.

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*ADMINISTRATION OF LARGE, SINGLE DOSES OF DIGITALIS IN CASES OF MITRAL INSUFFICIENCY WITH HIGH ARTERIAL TENSION.<sup>1</sup>*

BY M. HUCHARD,

Paris.

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THE patient in this bed, gentlemen, is doubly interesting, as she brings up a problem of both clinical and therapeutical importance. This woman is forty years of age. Has never had rheumatism. The extreme pallor of her face you notice at once, and also that she breathes with great difficulty. This variety of dyspnœa I call "effort dyspnœa." On auscultation you will hear at the apex of the heart a souffle that is sharp, short, and intense, heard faintly in the axilla and hardly heard at all at the back. I need not tell you that it is a case of functional mitral insufficiency. Notwithstanding this, I consider the patient to be an arterial case, because, if we had an organic mitral insufficiency of endocardial origin, we should hear an accentuation of the second sound to the left of the sternum, about the level of the pulmonary artery, showing an increase of tension in that artery. But as I have shown you that you can only hear it on the *right* side, at the level of the aorta, there is evidently an increase of tension in the arteries. Moreover, the heart-sounds have a bounding character when we make the patient walk. I have called your attention to the extreme paleness of the face, which is not usual in mitral disease, so that, notwithstanding the absence of albumen in the urine, I should call this case one of cardio-renal arterio-sclerosis, with functional mitral insufficiency and toxic dyspnœa.

You know already that exclusive milk diet works wonders in such cases,

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<sup>1</sup> A bedside demonstration to students at the Bichat Hospital, Paris.



and in a few hours it will sometimes free the patients from dyspnœa. Such a result we saw in this same woman two weeks ago, but since then she has taken her usual food and the attack has returned. As her limbs were œdematous I was obliged to begin active treatment for this condition, and I ordered her accordingly a large dose of digitalis,—fifty drops of the crystallized solution of digitaline made by Mialhé, given in one day at a single dose of a milligramme, which is equal to four milligrammes of the amorphous digitaline, or one-sixtieth of a grain. What, you will say, give such a large dose of digitalis when its accumulative effects are so well known? And to a patient who has a hypertension of the arteries? Besides, you often tell us that we must exercise great care in giving a medicine that is a poison, so that we may not substitute by our treatment a condition of affairs worse than the patient's original trouble.

To answer your objections. You say that digitalis acts slowly and accumulates in the organism. Well, that is a good reason for giving it in a massive dose: when you wish to make a patient sleep you give him at once a centigramme (one-sixth of a grain) of morphine and not four doses of a quarter as much. The same reasoning applies to digitalis as for other drugs whose action is slow. You should not divide doses of such remedies, as they divide themselves in the body by their slow action and poor quality of elimination. In the employment of drugs that are eliminated rapidly you should always divide your dose so that the organism shall be kept continuously under the influence of the drug. I have often spoken to you of the epileptic case that was taking eight grammes (one hundred and thirty-three and a third grains) of bromide of potassium without effect, but who got rid of the attacks by taking two grammes (about thirty-three grains) at short intervals. You will get by far the best results with digitalis if you take care to precede it by a purgative and keep the patient on a milk diet. Besides, you must not be frightened by arterial hypertension from giving it. It does not so much increase this tension as it regulates it. You have seen that in this particular case the tension has fallen since the digitalis has been given.

Without doubt you must be careful not to give one poison to take the place of another, as you would do in toxic dyspnœa, but digitalis in this case brings on diuresis, and, therefore, causes an elimination by the kidneys of all the poisons that are in the organism producing the dyspnœa. So that by giving this drug and milk diet you fulfil two indications: first, the milk prepares the way for diuresis, and thus reduces the toxins to a minimum, and, second, the digitalis assists in establishing the elimination. You see the complete success we have obtained with this patient. After the purgative, rest in bed, and milk diet, fifty drops of the one-thousandth solution of crystallized digitaline were given for one day at one dose. The next day the urine increased from two hundred grammes to two thousand, and the day after to four thousand grammes, or four litres (*i.e.* four quarts). At the same time there was a diminution of the œdema of the limbs, while

the mitral souffle could hardly be heard. This proves once more to you all that it is not enough for a workman to have good tools, but he must know how to use them. In careful hands digitalis is a wonderful medicine and should never be dangerous in therapeutics.

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*COLLES'S FRACTURE AND ITS TREATMENT; GONORRHOEA; LOCALIZATION OF DISCHARGING FOCUS AND TREATMENT.*

CLINICAL LECTURE DELIVERED AT THE NEW YORK POLYCLINIC.

BY ARPAD G. GERSTER, M.D.

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GENTLEMEN,—The first case is that of this boy, who fell, striking upon the back of his hand, three days ago. You may make your own diagnosis. The facts of the case are that he fell, that he struck the dorsum of the hand, that he has pain in the lower end of the radius, and that the part is very painful to the touch. There is no abnormal mobility, and no crepitus can be obtained without using great force, possibly not then. We have thus the etiological factor in the fall and the local evidence given by the localized pain. I do not hesitate to diagnosticate this case. Even though there be no crepitus and no displacement of the fragments, we have here a Colles's fracture or, as I prefer to call it, a typical fracture of the radius,—a fracture without displacement, or a displacement so slight that it might get well by itself, as happens in many cases which are untreated; get well as animals get well. The animal that breaks its leg crawls into a hole and stays there until well. There are a good many human beings with Colles's fracture who would do better with such treatment than in the hands of meddlesome surgeons. We have, then, here a Colles's fracture with no displacement of the fragments. To let such a fracture alone is better than mauling it and handling it and covering it with a clumsy splint.

But in such a case doubts may be raised as to the correct diagnosis, as to whether we have here a fracture or not. In such a case we might incise and expose the bone, if it were worth while to determine the point. I do not desire to perform this operation, but I would not fear that the test would disprove my diagnosis. The term Colles's fracture covers many forms of fracture. I have never seen two exactly alike, although I have seen many hundreds. The formula of Colles's fracture simply indicates that the lower end of the radius is fractured. But it tells nothing of the more intricate features of the injury. These we must determine individually for every case. In the case before us, three or four circular strips of adhesive plaster, to maintain the present position of the fragments, and a sling, will be all that is necessary. Many cases of Colles's fracture, which are easily reduced and retain the posi-



tion easily, require no more treatment than this. There are other cases easily reduced, but in which the displacement returns easily. There may be great comminution, and in these cases we must have a splint moulded not only about the wrist, but about the hand, to hold the hand in a suitable position. For myself, I decide in every individual case what this splint shall be. I do not accept Dr. So-and-So's splint for every case. Each case requires its own splint. And what will better adapt itself than plaster of Paris applied on a roller bandage, or, better still, two layers of gauze? The plaster of Paris being wet so as to form a thick cream, into this we put the compresses until saturated and permeated with the plaster, and then apply one on the upper surface and the other on the under surface of the arm, smearing them over with still more plaster, and removing when hard. We have then two shells which we trim and put back, with crinoline bandages to keep them in place. If now we want to examine and see whether the fracture is in place at any time, we have simply to take the scissors and snip the outer bandage and lift the upper shell, and the part is exposed. Now, how much better, gentlemen, is this than a shingle splint applied with strips of adhesive plaster, in one place too tight and in another too loose! The shingle is straight; the arm is curved. I repeat, gentlemen, there is no cut-and-dried treatment for Colles's fracture which will adapt itself to all the cases which you will have to consider. If you now examine this arm, and if you press upon the epiphysis an inch above the styloid process of the radius, the boy shows signs of pain. Pressure upon the styloid process itself does not produce this pain; the pressure must be applied above. This is as sure a test as I know that the bone is here cracked. If you keep this boy under observation you will find, by and by, a massive callus thrown out about this spot. There are some men who will not diagnosticate a fracture unless they can grind the bones together and make the man cry so that he can be heard in the next block; they remind you of the man in the play who walks around the stage while another man, from behind a tree, whacks him over the ear with a club so as nearly to knock him down. The first man says, "Strange." The blow is repeated, and he says, "Strange." It is repeated the third time, and then he says, "Some one is evidently approaching." So the surgeons grind the bones together, and they twist the limb, and require all this coarse evidence before they will diagnosticate a fracture.

We shall, however, assume that much depends upon your diagnosis. The President of the United States has sustained this injury. If he has a fracture, the arm must be put up in a splint and carried in a sling; he must not use his right hand; he must not sign documents. If he has no fracture, he can go on with his business. One set of doctors say that he has a fracture, and another set of doctors say that he has a sprain. What will you do now? You can cut open and find out, but probably the patient will discourage this plan of treatment. There is a saying among the laity that a sprain is worse than a fracture, and there is a grain of common sense in this saying, as in most popular sayings. A bad sprain, however, is nothing but

a fracture. There is here a fissure of the bone extending into the joint; there is no displacement. The fragments are held down by periosteum, but the case is just as much a case of fracture as though the fragments were displaced. We shall have a callus formed here, and three or four weeks will be required to repair the injury. The part will not be painful at first, but, as an exudate is thrown out, it will become swollen and painful. Now, the doctor who says that the President has a sprain and no fracture will give the part no adequate rest. The inflammation will be more intense than if the part had been confined in a splint, as in the case of a well-established fracture. We shall have a traumatic inflammation of the joint. Where, on the other hand, the joint is confined and the fissure is treated like an ordinary fracture, the sprain is no worse than a fracture. The formula is true only where the fissure is not recognized, and the fragments are not confined; then the part becomes irritated and the case lacks the rest which is the first necessity for the cure of broken bones.

The treatment in this case is that suggested by my friend, Dr. Pilcher, of the Post-Graduate School. This treatment is not irksome to the patient, and it accomplishes all that the treatment can accomplish for such a case. We shall now apply adhesive strips as a sort of bracelet about the arm. We shall not apply them too tightly; this is neither necessary nor desirable. The order of procedure is as follows: First reduce the displacement, if it be present, and study what posture best retains the fragments in position; then apply the slips of plaster so as to maintain this position. Where œdema has supervened, it may be necessary for us to apply a roller bandage from the tips of the fingers up. The œdema will disappear in a few days, however, and then the bandage may be dispensed with.

The next case, gentlemen, is one of gonorrhœa of seven or eight months' standing. There is still a chronic discharge and there is some trouble in passing water. We shall proceed to examine the urethra in this case. We shall, however, first have the patient pass water in two tumblers. This is a good way, gentlemen, to obtain a preliminary idea of the condition of the interior of the urethra. I find here a gluing together of the orifice of the urethra, but there is no visible discharge. Gentlemen, always inspect the urethra before undertaking its treatment. Never treat the urethra without physical examination. I have coming to my office a patient who has been treated for urethritis for months and has used ten different formulæ for injections, and not once has the doctor ever looked at the urethra. The patient stated that he had "clap," and the doctor prescribed. The physician should not content himself with the patient's statement, but should base the treatment on his own diagnosis. In instituting treatment, take the trouble to show the patient how to carry it out. Do not take it for granted that the patient knows how these injections are made. I recall a case of phimosis, in which the patient had injected under the prepuce for gonorrhœal urethritis for months; actual examination of the facts showing



that he had not injected the urethra at all. In your examination, lay bare the entire inguinal and pubic regions and inspect them. In this way you can tell whether you have phimosis, paraphimosis, œdema, an ulcer, or eruption; also, whether the glands are involved. Having inspected the external parts, examine the orifice of the urethra. We have cases of gonorrhœophobia,—patients who think they have urethritis, but who never have had a discharge. Such cases are not rare. I have three or four of such cases coming under my own observation each year. Such a case might go on for years and not be cured; the patient would believe that he had gonorrhœa, and the doctor could not disprove it.

If, on your examination, you find the meatus glued together, and if, when pulled apart, it shows a swollen and congested mucous membrane, you have an inflammation at the anterior portion of the urethra. The urethra is practically divided, for purposes of treatment, into two portions: the anterior and the posterior urethra. Anatomically, of course, we have the divisions,—pendulous urethra, bulbous, membranous, prostatic; but for purposes of treatment the division into anterior and posterior urethra is sufficient, the first being in front of the cut-off muscle, and the second being the portion which is behind the cut-off muscle. If now we have the patient pass his water in two vessels in the case of chronic urethritis where the anterior urethra only is affected, the first urine will be turbid and contain shreds, while the second half will be clear; if the deep portion of the urethra is affected, the contents of the second tumbler will also be turbid. The first will be more turbid, but the second will also contain a deposit. The cut-off muscle, or the compressor urethræ, is the muscle which makes the voluntary retention of urine possible. The sphincter of the bladder is a weak muscle and involuntary in its action. It is the cut-off muscle which arrests the sound in the urethra, and which affords an obstacle which may be insuperable to a small instrument. This is sometimes called a spasmodic stricture of the urethra, but it is not a stricture. You may shut your mouth, but you do not say that you have a stricture of the mouth. The cut-off muscle may prevent the passing of urine and the entrance of an instrument, but it is not therefore a stricture. This muscle is habitually contracted. It requires a voluntary effort to cause its relaxation for the escape of urine. The cut-off muscle furnishes valuable evidence in the diagnosis of urethral diseases from its habitual contraction. The pus in front will all flow off and will be discharged from the meatus, soiling the linen. The discharge behind will be retained. It will distend the membranous portion and the prostatic portion, and will enter the bladder by a retrogressive movement. When full, the bladder and the neck of the bladder, down to the cut-off muscle, constitute one pear-shaped cavity. In cases of posterior urethritis, then, the urine becomes mixed with pus. This is the reason why the urine voided into the second tumbler is found to be turbid. You see, gentlemen, the value of this evidence in your examination. In some cases, too, the patient is so sensitive that no examination is possible,

and you must then form an opinion, and, in many cases, can give a correct diagnosis from the evidence of the two tumblers alone.

In this case I will first wash out the anterior portion of the urethra. I pass a small catheter up to the root of the penis. You notice, as I inject, the liquid escapes along the side of the instrument, the eye of which is in front of the cut-off muscle. I feel the resistance of the cut-off muscle ahead. This will deceive a beginner, and even an old practitioner sometimes. I have now passed this muscle, and none of the injection escapes. All the fluid enters the bladder, but notice, too, not a drop returns by the catheter. The eye of the catheter is in the deep urethra in the space behind the cut-off muscle. The injected fluid distends the membranous portion and the prostatic portion of the urethra, the sphincter relaxes, and it enters the bladder. But when the pressure is omitted the sphincter contracts and nothing escapes. I must penetrate still further into the cavity of the bladder itself to obtain the discharge of this fluid, or the patient may pass it voluntarily.

We shall now examine the case for stricture. For this we shall need a bulbous instrument. In passing this instrument I observe a narrowing of the meatus, which is passed with some difficulty. The cut-off muscle forms a certain resistance, but this is overcome by steady manipulation. The instrument, however, catches just as it passes into the bladder. There is a stricture of the membranous portion. There are, then, here two strictures, which sufficiently explain the existing condition. We shall divide the stricture of the meatus so as to introduce a full-sized instrument into the urethra, and we shall dilate the stricture above. I would not advise urethrotomy. I would not proceed to so serious a step except in cases where dilatation has been proved insufficient. I have incised the meatus, and have passed a full-sized sound. This is now in the bladder. The part will be dressed with iodoformized gauze, and the patient will return upon Friday.

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## *OSTEO-SARCOMA OF THE FEMUR.*

CLINICAL LECTURE DELIVERED IN THE UNIVERSITY HOSPITAL.

BY LOUIS McLANE TIFFANY, M.D.,  
Professor of Surgery in the University of Maryland.

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GENTLEMEN,—The patient whom I show you to-day comes to us from a distant part of the State, having been brought here by his physician, who is now present. His history is as follows:

CASE I.—Male, white, aged twenty-nine, has had for six or eight years an increasing enlargement just above the right knee. He is a strong, active man, living in the country, and until recently has been able to attend to his ordinary avocation,



that of a farmer. He dates the commencement of his disease from a fall, the outer surface of his thigh having been contused. Especially painful was it where the tumor now grows. He paid no attention to the injury at the time, but within six months noticed a tumefaction, which has gradually increased up to the present time. His bodily functions are well performed, and he suffers little or no pain, the main discomfort arising from the weight and unwieldiness of the affected member. Physical examination of the growth shows a large fusiform tumor apparently involving the lower third of the femur, which is here about double the size of the other thigh at the corresponding point. The growth in the vicinity of the knee-joint is hard and inelastic, being apparently bony. Above and to the outer side there exists a cyst, which contains about a pint of fluid of some sort. The tumor is intimately united with the femur, is not movable, and does not encroach sufficiently upon the knee-joint to give rise to much trouble. It does not project into the popliteal space. The muscles play over it. The patella is movable, and the patient walks without pain. The temperature of the growth is about two degrees higher than that of the corresponding point in the other thigh. His pulse is normal, digestion good, and appetite good. He has not lost flesh lately. The glands in the groin are perceptible on the right side, and scarcely if at all on the left. Elsewhere throughout the body the glands are not enlarged. The lungs are normal. The diagnosis is osteo-sarcoma of the right femur, with a cystic formation in the outer aspect of the thigh.

The patient is advised to enter the hospital and submit to amputation. This advice he will take under consideration and will most probably appear before you again.

Sarcoma of bone is not infrequent, it being the most frequent form of tumor connected with the osseous structure, and the term osteo-sarcoma is a general one used to indicate the seat from which the tumor grows as well as the kind of tumor which may be present. Sarcoma, as you know, is a connective-tissue tumor, and, therefore, finds its seat in bone, which is also a connective tissue. Sarcoma is composed of two elements,—cells, and cellular tissue more or less distinct, usually, however, in scanty amount, blood-vessels, nerves, etc., and according as the cells of which the tumor is composed are large or small, round or elongated, so are the terms small cells, spindle cells, myeloid cells, etc., made use of. A further classification is made from the locality where the growth originates. A central or periosteal sarcoma may be either spindle- or round-celled, etc. It is usual in speaking of sarcoma to define both from microscopic structure and seat of growth. Thus, we speak of the small cell, periosteal sarcoma, of the spindle cell, central sarcoma, etc. Sarcomata are with other connective-tissue tumors more often seen in the first half of life, making their appearance, as a general rule, before the age of thirty. They are far more often seen in the long than in the irregular bones, and, while choosing such bones, they will choose the epiphysis more often than the shaft of the bone. The lower end of the femur and the upper end of the tibia are the two chosen seats, the next in frequency being the upper end of the humerus, but the fact that this kind of tumor is so often seen about the knee-joint will enable you to understand how often knee-joint troubles may be confounded with the growth in question, and it is a matter of very general experience to find

difficulty in distinguishing between the knee-joint disease and the sarcoma growing immediately adjacent to the joint, and perhaps invading it, although this is very rare and takes place only when the disease is far advanced. The articular cartilage is very often preserved intact, although the sarcoma tissue may be all about it.

The origin of osteo-sarcoma is very generally referred, by the patient, to some injury, so often indeed as to justify the opinion that traumatism does have much to do with the commencement of the growth. Except from injury I know of no cause. The injury may be slight, and it is very difficult in such cases to suppose that the growth did come from such an insignificant cause. In other cases, however, the history is so very clear as to leave no doubt.

Such a case is the one whose photograph I now show you. The history is as follows :

CASE II.—M. L., white female, aged nineteen, large and well-developed, five years before being seen by me, in running across the street, tripped and fell, striking her right tibia about the middle against the curb-stone. She suffered much pain, and after the bruise from the injury had disappeared, a thickening apparently of the periosteum remained. Two years later this thickening slowly began to increase, until, when I saw it, it was decidedly larger than an adult head. The skin had given way and a bleeding fungus protruded. I amputated through the right thigh, and all went well.

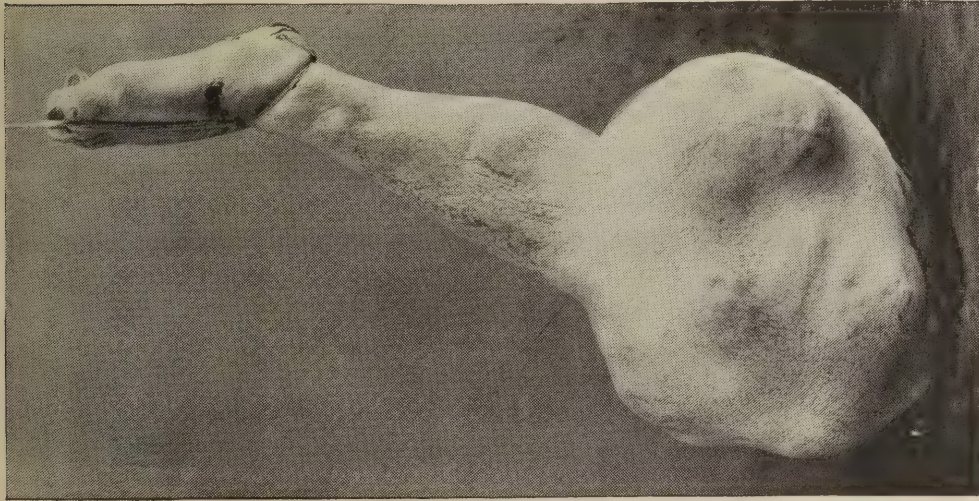
I do not think that hereditary tendency can be made out. The shape of the sarcoma will vary. When myeloid it is apt to be rounded, and perhaps bossed. It may be covered entirely by bone or plates of bone, which latter can be found at irregular intervals over its surface. If of slow growth, the myeloid sarcoma is very apt to remain covered with bone. Periosteal sarcoma, on the other hand, is usually fusiform in shape, and may involve the greater portion of the shaft of the bone. It is rarely entirely covered by bone, but may present irregular bone formations on the surface. When not covered by bone, the consistency of the tumor will vary according as it is a round or spindle-celled sarcoma. The former is the more soft, so much so as to give a sense of pseudo-fluctuation. I would call your attention here to a point in regard to the consistency of the tumor which may assist you in your diagnosis, as it has me on more than one occasion ; and that is that the consistency of the sarcoma, if not covered by bone, will be found to vary. Thus, a patient from a distance is examined to-day, and then put to bed at rest. On the next day the tumor will be less tense, and may show apparent fluctuation. This change is probably due to a different vascular tension brought about by the rest to which the patient has been subjected during the twenty-four hours ; and it is this enforced rest during doubtful cases which has assisted in a difficult diagnosis.

The size of the tumor varies within extreme limits. The largest which it has been my fortune to see was one for which I amputated at the hip last week. The tumor was fifty inches in circumference, and weighed, after

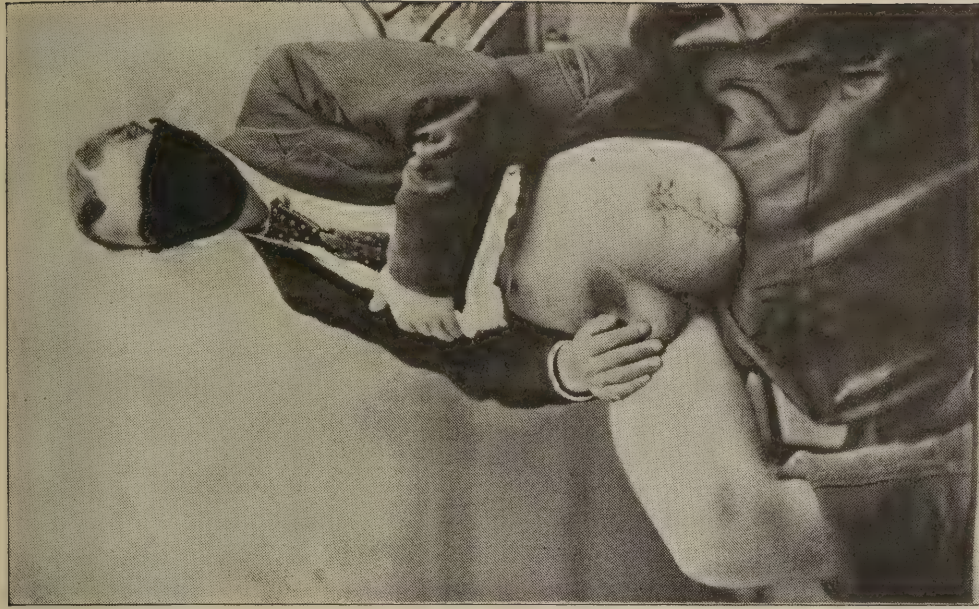




CASE II.—SARCOMA OF RIGHT TIBIA. The microscope showed spindle, round, and myeloid cells.



CASE III.—SARCOMA OF LEFT FEMUR. The photograph is from the Army Medical Museum, Washington, to which the amputated limb was sent.



CASE IV.—AMPUTATION AT HIP-JOINT BY LATERAL FLAPS. Spindle cells greatly predominating.





much blood had drained away, fifty-nine and a quarter pounds. I show the photograph.

CASE III.—The patient was a white male but little over thirty years of age. The tumor had been growing for thirteen years, and was covered by bone. I amputated at the hip by Furneaux Jordan's method, and the patient recovered.

Adjacent glands are affected rarely, that being one of the characteristics of sarcoma as distinguished from carcinoma. In some few cases, if enlarged, the glands may go down after amputation, although this is rarely to be expected. The glands are not affected during the early life of a growth, but still they should always be searched for, not only adjacent to the growth, but all over the body. On the other hand, pulmonary metastasis is to be looked for always, and in a certain number of cases will be found present. Some varieties of sarcoma are far less likely to reproduce themselves in other parts of the body than others; thus, myeloid sarcoma is very rarely infectious. Some of the small-celled sarcomata, however, are extremely so. Local infection is usually not noticed until a sarcoma has broken through its bony or fibrous envelope. So long as the sarcoma remains surrounded by bone it is apt to grow slowly. When it escapes from its bony prison, however, it grows with great rapidity. This is especially the case, also, when it protrudes through the skin; then the increase is extremely rapid, and is accompanied by frequent loss of blood. Indeed, the loss of blood from an open sarcoma may be sufficient to blanch the patient, and, if frequently repeated, will induce death.

The temperature of a growing sarcoma is higher than that of normal tissue, and will aid you in recognizing the growth. Should a surface thermometer not be at hand, an ordinary clinical thermometer placed upon the limb and covered with cotton may be taken as a fairly exact index of the temperature of the growth. It should be left in position not less than five minutes; and if the same manipulation is gone through with the corresponding part of the body on the other limb, a difference will be noted.

Plates of bone on the surface of the growth point to sarcoma, as does also an elastic, thin, crackling envelope of bone.

The rate of growth presents great variations. The large tumor (Case III.) about which I spoke to you a few moments ago grew continuously during thirteen years, and when amputated by me was covered by bone.

The treatment is simple. Enucleation does not suffice. Amputation is called for. The amputation must be sufficiently far from the growth to avoid recurrence *in situ*. Wherever possible, the entire bone which is the seat of the tumor should be removed, since the medullary canal may be infected quite a distance from the primary growth, or the proximal extremity of the bone may contain a nodule. Possibly the femur is the only bone the whole of which it is best sometimes not to remove when the lower extremity is the seat of sarcoma; and hip-joint amputation is not always to be done, because it is followed in so many cases by fatal results.

The humerus, tibia, etc., however, should be removed in their entirety. Adjacent glands should be explored thoroughly after the amputation is done, since glands not noticed prior to amputation may come into view when the skin is opened. I think it is unwise also to use Esmarch's bandage for the purpose of rendering less vascular the extremity, especially if the entire bone which is the seat of morbid growth is not to be extirpated, since fragments of the growth may be forced towards the proximal extremity of the bone.

CASE IV.—Showing stump after hip-joint amputation for osteo-sarcoma, involving the middle third of the femur. Amputation done November, 1881.

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## UNUSUAL LESIONS OF THE SKIN PRODUCED BY MOSQUITO-BITES.

CLINICAL LECTURE DELIVERED AT RUSH MEDICAL COLLEGE, CHICAGO, ILLINOIS.

BY JAMES NEVINS HYDE, A.M., M.D.,

Professor of Skin and Venereal Diseases.

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OUR first patient to-day is a wholesome-looking Englishwoman, thirty-four years of age, married, and the mother of several healthy children, who arrived in New York as an immigrant three weeks ago. (The patient was presented September 21.) She states that she has enjoyed good health prior to the present illness. Almost immediately after her arrival in New York, the skin of her face, forearms, and hands—more particularly the dorsal surfaces of the latter—became the seat of the eruption now apparent, which is the source of distressing sensations of burning and intense itching. The parts adjacent to those chiefly affected, such as the neck, the upper chest, and the upper arms, are to a less extent involved in the same disorder.

When examined, the skin of the face is seen to be tumid, reddened, and mottled irregularly with streaks of a vivid rosy-red hue, and with very superficially-seated, thin crusts. In a few places, especially where it has been rubbed and scratched, there is slight weeping. One portion of the brow is of such a vivid-red hue and so swollen that it strongly suggests the appearance of an erysipelas, though there is no febrile action. A few broken blebs can be distinguished, by the *débris* of the roof that originally covered the chamber containing serum, by the ragged fringes of epidermis, and by the slightly macerated floor left at the site of each.

The eruptive features are, however, much more distinctly shown over the forearms. Here the integument is tensely swollen, of a bright-red hue, and sparsely and irregularly covered with perfectly typical bullæ, distended



with a clear serum. The unruptured and ruptured lesions are seen side by side, with serum exuding from isolated moist plaques, scratch-marks visible here and there, and thin crusts where the serum has in places desiccated. There are no pustules nor scales; and no signs of a cutaneous or other disease elsewhere. On the forearms the "erysipelatous" appearance is more suggestive than over the face.

There are annually presented at this clinic a few patients (rarely more than two or three in the year) affected with the disorder whose features are now exhibited to you. It is on account of the relative rarity of the affection of this particular type that I am always pleased to have the opportunity of explaining its peculiarities. The uniformity with which the histories of the several cases repeat themselves is worthy of special note, and even suggestive in every case of the road to the diagnosis. The subjects are for the most part middle-aged women and children of English nationality, who give, as the date of the first appearance of their symptoms, the first week after their arrival for the first time in America. They have been, as a rule, steerage-passengers on an ocean steamer, from whose decks they have removed to the close rooms of a cheap boarding- or lodging-house. What then has happened to these ruddy-faced women and apple-cheeked children to cause them to exhibit suddenly the features of a disorder so formidable as to resemble erysipelas, over an enormous area of inflammation, with great subjective distress, and which yet is certainly not an erysipelas?

For the answer, I am always pleased to express publicly my indebtedness to my friend, Professor J. C. White, of Boston, who many years ago offered the clue to the mystery. These immigrants are always affected with these peculiar symptoms in the late summer or early autumn. In the poorly-furnished rooms, where they have been lodged, there are no mosquito-nettings. In the heat of the night the clothing has been thrown off the upper portion of the body, and mosquitoes have attacked the skin with avidity. As these insects are wholly unknown in England, none of the subjects of this affection has ever before been similarly attacked. The "midges" of the tourist in Great Britain are not capable of inflicting any great mischief on the integument. American women and children, similarly exposed, suffer to a much less extent, not merely because their skins have endured annual incursions of the pests, and been thus in time rendered to a certain degree insensible to the irritant, but because they have probably inherited their skins from generations of native inhabitants of this country, similarly habituated to the conditions of life on the soil. After exposure without protection to such attacks, our native women and children exhibit only those familiar lesions produced by the insertion of the haustellum of the *Culex pipiens* into one of the pores of the epiderm. A minute droplet of blood rises to the level of the lip of the little well artistically driven through a process of the rete projected between two papillæ as far as the vascular plexus beneath. This minute reddish punctum becomes at once, especially if rubbed or scratched, the centre of a split-pea-sized, typical

wheel. At first, especially on the delicate skin of a woman or child, its whitish body, central punctum, and rosy periphery are conspicuous; later, the appearance is that merely of an ordinary minute papule of inflammatory type and transitory duration. Ordinarily, in the course of a few hours or a day, little more can be distinguished in the skin than the slightly reddened points where the traumatism was inflicted. With the application of one of the popular remedies (the spirit of camphor or alcohol and water) the annoyance commonly subsides.

It is far different with the sensitive skins of the patients whose class is well illustrated in the picture before you. The integument in this case is virgin of previous assault of this kind; the marauders have the instinct to select that field for boring which is most succulent and most capable of yielding the largest percentage of returns with the least expenditure of labor. The result is a severe, at times even an alarming, bullous dermatitis, in the course of which the lids may be so swollen as to exclude light from the eyes, and the skin of the arms swollen to the utmost point of distention. Nor are these lesions limited to the regions we find involved in the case of this woman. I have seen them on the buttocks and the back, over the lower limbs, and even on the genital region. It must be remembered that the nights in the month of August, in the cities where our immigrants are commonly landed, are really those of a tropical country. Many of these sufferers have never before in their lives experienced such temperatures. In their distress much if not all of the clothing is thrown off the body, and they are thus often wholly exposed to repeated attacks of the enemy in swarms.

But this is not all. The first step, on the morrow, is usually in the direction of one of the public charities with a view of securing relief. Here, if the physician in charge be not well instructed as to the symptoms in question, he commonly falls into one of two palpable errors:

His thermometer tells him that he has not been confronted with an erysipelas; hence he concludes that the case is one either of "pemphigus" or of some "disease of the blood." In the former case, he administers arsenic in full doses, which speedily adds its noxious effects to those of the mosquito; or in the latter he orders the much-abused iodide of potassium with a view to "purifying the blood." The latter, especially when in combination with mercury, finds a fit field for the exhibition of many of its curious antics in the swollen and tormented skin of these unfortunate patients. In many cases, when exposed the ensuing night to a fresh onslaught of voracious insects, their skins actively resenting the drugs ingested or applied, there is no lack of bugs which in these low tenements increase the misery of existence. The pitiable picture which we are now studying is not drawn from imagination, but from repeated and careful examination of the skins of many patients. The composite portrait presented to the eye of the careful clinician, into whose hands these patients may finally fall, is one well calculated to perplex the most observant. One is often then afforded in the



same person, a study of multiformity in cutaneous medicine sufficient to tempt the pencil of a Murillo, who was, I believe, the only one of the great art masters to put lepra on canvas. Here are confused and commingled wheals, erosions, papules, macules, purpuric blotches, where the skin has been bitten, blebs, crusts, and typical patches of eczema in almost every type, all this often in skins long unwashed, and tormented also by the coarsest clothing worn next it.

I have lately taken pains to discover what one of the leading English writers on skin-diseases has to say upon this fruitful theme. He bears unconscious witness, in his text-book, to the absence of the mosquito in England and his unfamiliarity with this special American dermatosis. He dismisses the subject in a paragraph of ten lines, in which it is declared that "gnats and mosquitoes attack men and produce a wheal, and in hot countries are a real pest." We find here a suggestion that the American physician should be actually more instructed than those of almost every other nation, since it is reserved practically for him to deal alike with the disorders of frigid, temperate, and torrid zones, even though he may reside in but one!

We shall order for this patient a lotion containing to each pint of lime-water a drachm of the zinc oxide and a drachm of glycerin, which, after it is shaken up, is to be well mopped over the part. The whole will be dusted afterwards with equal parts of finely-powdered boric acid and starch.

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## *PLEURITIS, EMPYEMA, AND SEPTIC PNEUMONITIS FOLLOWING SUBPHRENIC ABSCESS.*

CLINICAL LECTURE DELIVERED AT THE BUFFALO GENERAL HOSPITAL.

BY CHARLES G. STOCKTON, M.D.,

Professor of the Principles and Practice of Medicine in the Medical Department of the University of Buffalo, Physician to the Buffalo General Hospital.

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THIS young man is twenty-seven years of age, an American by birth, and a Turkish-bath attendant. His family history is not one that has much bearing upon his present condition. His father died of heart-disease; his mother is living at the age of sixty-eight, but has hemiplegia. He has lost neither brothers nor sisters. He enjoyed good health till two years ago, when he suffered from pain in the region of the liver, and after a while there was developed an abscess, which seemed to be above the liver and under the diaphragm, and for that reason the name subphrenic was given to it. He entered the hospital for treatment by Dr. Park, who opened the abscess and drained it. After a comparatively short time he made what appeared to be a complete recovery. He seemed perfectly well until about two

months ago: At that time, in jumping up to catch hold of an object above him, he felt something give way in his side in the region of the old abscess cavity. Immediately the trouble began again,—pus reaccumulated, the abscess was opened by a physician in the country, and the contents twice evacuated. He came here on the 1st of September for treatment. After a few days of comparative comfort he had a severe chill, the temperature rose to  $104.8^{\circ}$ , and there was great prostration. Dr. Park then turned the case over to me. On examination at this time I found him having a short, repressed, painful cough, complaining of pain in the axilla, in the mammary region, and in the vicinity of the liver. His breathing was rapid, motion on the right side very much restricted, and it pained him to take a long breath. Evidences pointed to something wrong with the right lung or pleura.

At this time his pulse was 106, his respirations about 36, and the temperature  $102^{\circ}$ . The pulse and temperature maintained about the same ratio, the pulse gradually declining to 90, and the respirations varying from 25 to 35 per minute for several days after the chill. For ten days the respirations, pulse, and temperature remained at about 28, 110, and  $101^{\circ}$  respectively. To go back in the history, on September 8 an examination was made with the exploring needle in front over what should have been lung and pleural cavity. The needle was introduced two inches and no fluid discovered. On the 11th, after having made a careful examination of the chest, I punctured and withdrew some serum. There was marked dulness in front up to a line one or two inches below the nipple, where the dulness suddenly ceased, and above which there was perfect resonance. On auscultation of this area we got the breath- and voice-sounds quite plainly, both in front and behind, the sounds being much like those heard over a consolidated lung,—bronchial breathing and bronchophony,—although the voice had something of the character of ægophony. It led me to suppose that there was a solid lung and, possibly, fluid lying over the lung, the lung being held down by adhesions so that it could not be compressed and pushed upward by the fluid. It seemed probable, therefore, that there was fluid, and aspiration later proved its presence beyond a doubt.

Now, as I make percussion over the region of the liver, I get perfect flatness. At the lower margin of the lung there is dulness, half an inch above the nipple there is still dulness, and two inches above the nipple there is normal resonance. In the axillary line we have a corresponding gradation of flatness into dulness, and then into resonance, while the same holds good for the back.

The question arises, What is the nature of this trouble and what has led to the inflammation in this man's pleural cavity? A subphrenic abscess may be developed from the stomach or intestine or any other neighboring organ, but such abscesses more commonly arise from the liver. Sometimes foreign bodies and particularly spiculæ of bone work their way through the walls of the stomach or intestine just as needles do through



the cellular tissue. The portal blood not very infrequently leaves in the liver-substance the elements of suppuration, and we find abscess of the liver, therefore, rather more frequently than of the other glands of the body. I have no doubt that in this case there was a small abscess near the superior border of the liver which extended upward and formed the subphrenic abscess which was opened. I think, further, that the trouble in the chest has been from ulceration of the abscess-cavity through the diaphragm, and that as ulceration took place limits were put to the abscess by newly-formed adhesions so that a localized empyema resulted. There is no doubt that somewhere in this man's pleural cavity there is still pus. Over and unconnected with this pus-cavity has extended a non-purulent inflammation resulting in pleurisy, and that has given rise to the serous fluid about the lung which we found on September 11. The lung, bound down by inflammatory adhesions, probably became affected by the same elements of inflammation which existed in the pus-sac, and took on a localized septic pneumonitis, not a true lobar nor lobular pneumonia. Undoubtedly the patient still has fluid in his pleural cavity, the lung is still consolidated, and there is still pus somewhere in the vicinity of the diaphragm, just where we do not know, and that question may have to be settled by a more extensive operation later.

To-day I propose to aspirate the patient a second time. On September 11, when I drew off about thirty-four ounces of fluid, the needle passed through a small area in which pus was found, and I thought then there was an empyema. That flow of pus ceased, however, after an ounce or two had been withdrawn, and on pushing the needle farther, I removed a quantity of clear serum. After about a quart had been taken away, the patient experienced pain and began to cough, and on that account I discontinued the aspiration. I found that the canula came against some solid substance in the cavity of the chest which prevented the outflow of the fluid, and I could withdraw the fluid only by carrying a probe through the canula and pushing against this solid substance. I believe that this was the consolidated lung. Not infrequently bands of coagulated lymph push against the canula, but in this case I had to maintain pressure against a body that was dense and hard, and which, in that location, could have been nothing else than the consolidated lung.

As a general rule, it is wise in aspirating to insert a small exploring needle first. Often when we think there is fluid, the physical signs are due to thickening of the pleura itself or to consolidation of the lung. But, as I did not withdraw all the fluid at the last tapping, the physical signs showing that about half of it had been removed, and as since that time the signs point to the belief that the fluid has returned to about its original quantity, I shall now aspirate without preliminary exploration with the needle. If the fluid proves to be purulent, indicating that the case is one of empyema, I shall again transfer it to Dr. Park. If the fluid is clear, we may find it necessary to repeat the tapping. There is at present

ægophony heard along the surface of the fluid in the pleural cavity, which is considerably distended.

I insert the needle in the eighth intercostal space posteriorly, and pus immediately issues. The case resolves itself, therefore, into one for the surgeon, it being no longer a simple pleuritis, but an empyema. That is, the exudate no longer contains merely fibrin and a few white and red corpuscles, but it contains a large number of leucocytes, and in addition micro-organisms, which are the cause of pus. It has no tendency towards recovery, but rather towards the enlargement of its cavity, like any other abscess in the effort to discharge itself. By means of the surgeon's art, however, emptying the cavity and giving it free drainage, we may greatly shorten and improve on nature's method, and the chest will get well, though undoubtedly with some deformity. About five hundred cubic centimetres of slightly-greenish pus, thicker than cream, have been removed.

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### *EMPHYEMA FOLLOWING SUBPHRENIC ABSCESS; OPERATION AND DRAINAGE.*

CLINICAL LECTURE DELIVERED AT THE BUFFALO GENERAL HOSPITAL.

BY ROSWELL PARK, A.M., M.D.,

Professor of Surgery in the Medical Department, University of Buffalo, and Attending Surgeon to the Buffalo General Hospital.

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GENTLEMEN,—This is not the first time that this young man makes his appearance before you, as he was here two years ago, when I presented the case as one of subphrenic or subdiaphragmatic abscess, the cause being obscure, but the diagnosis reasonably clear. The scar below the border of the ribs on the right side is that which was made at that time by the somewhat free incision for the evacuation of pus, of which there was removed about a pint. Whether there is any causal connection between his trouble at that time and his present condition I cannot clearly demonstrate, but I am inclined to think there is something more than mere coincidence about the recurrence of his present trouble. Twice during the last year he has been to see me on account of the soreness, tenderness, and even pain in the region of this scar, and since his last visit, about seven or eight weeks ago, a small opening has been made in this same line, and a little pus evacuated. Indeed, it was because this opening has failed to close that he came this third time to consult me. I then sent him to the hospital, in order that he might be under close observation, and to have the sinus washed out with peroxide of hydrogen solution. On the day after his entrance he came down with the acute pneumonia of which my colleague, Dr. Stockton, has told you. Presuming that his history from that time to the present has



been explained, let me preface what I have further to say about this case by some general remarks on the etiology and pathology of this condition of empyema.

First of all, let me say that the term *empyema* merely designates a collection of pus in a pre-existing cavity, and it is perfectly proper to speak of empyema of a joint or any other cavity. By common consent, however, the term, when used alone, is made to refer to the pleural cavity. This collection of pus may be produced from a number of causes, which I would thus indicate upon the board,—

1. Pleurisy with effusion.
2. Tubercular pleurisy.
3. Pneumothorax.
4. Perforation from lung cavities.
5. Perforation from abscess of rib.
6. Perforation from abscess below diaphragm.
7. Suppuration following penetrating wounds of thorax, connected usually also with breaking down of blood-clot, etc.
8. Fractured ribs and other traumatic causes.

The first two of these are by all means the most common causes of empyema, and it is well known how frequently a pleurisy with effusion will terminate in empyema by the gradual conversion of the serous accumulation into sero-purulent fluid, and finally into pus. This, of course, is due to pyogenic infection, for which it is difficult to account unless through the medium of inspired air. It is possible to have a tubercular form of pleurisy in which almost from the outset the contained fluid shall be purulent. At other times, in cases not originally tubercular, we may have secondary infection by tubercle bacilli and the consequent alteration in the character of the fluid. When a condition of pneumothorax obtains, it is easy to see how from contact with air subsequent infection of the pleura may result. Perforation into the pleural cavity, either from a vomica in the lung, from an abscess in the thoracic wall or ribs, or from one below the diaphragm, will also easily account for pyogenic infection of the pleura and a consequent empyema whose natural history is different from that of cases included under the first two headings.

Had there been in this case any evidence of a purulent collection in the chest previous to his acute attack of pneumonia, it would be very easy to account for his present condition on the theory of perforation from abscess below the diaphragm. So far as the other causes are concerned, almost any perforating wound of the chest will lead to effusion of blood within the pleural cavity and admission to the same of air and contained bacteria, because the injury is compound. The presence of blood-clot by itself is not sufficient to produce empyema, but a clot which has undergone contact with the air and consequent pyogenic or saprogenic infection may easily be an excitant of pus. The same is true also of cases of fractured rib, although there may be no external wound, since a sharp point of rib may scratch

through the pulmonary pleura and produce a condition of traumatic pneumothorax with the same result.

So far as the diagnosis of empyema is concerned we have to do practically with the same physical signs met with in cases of pleurisy with effusion, or hydrothorax, plus certain other features peculiar to septic infection. These consist mainly of greater alterations in temperature, of a condition more or less resembling typical hectic fever, a history perhaps of repeated chills, more sense of resistance within the chest, with less of thoracic elasticity, bulging of the intercostal spaces, and œdema of the soft parts about the thorax. It has been said also that the chest assumes a shape more nearly resembling a barrel than is the case in simple pleurisy with effusion. The final test, if necessary, is made with the aspirating needle, which is inserted below the line of dulness, and above the diaphragm. In this exploration it is well to use a needle large enough to permit the flow of pus thicker than usual, and containing, as it often does, flocculi of caseous material or particles of *débris*. Sometimes these cases are not seen by the medical attendant, or at least not by the surgeon until the collection of pus has already transgressed the natural boundaries of the pleural cavity, and has penetrated its wall and escaped into some adjoining region or cavity of the body. The most frequent direction taken under these circumstances is into one of the bronchial tubes, by which reasonably free exit is afforded, and as a result of which we have usually a condition of pneumo-pyothorax. Of this condition you will hear more from my colleagues on the medical staff. When I say to you that there is no direction in which the pus may not burrow, I have included everything; but I prefer to give you two or three illustrative cases. A patient, for instance, was once sent to the hospital for me to operate upon, with the diagnosis of tumor of the breast, probably malignant. On first inspection the woman presented an enormous enlargement of the left mamma, with the overlying skin red and protruding beyond the nipple, so that the nipple seemed retracted, and with every appearance of a large neoplasm, involving the whole gland. Upon palpation, however, I found that the breast itself could be moved as a whole over the thorax, and that it gave a peculiar sensation, as if it were fastened to a water-bag. Moreover, around its margins fluctuation could be detected. It was noticed that the woman's respiration was hurried, her apex-beat displaced, her condition one of general febrile disturbance, and it required only a hasty examination to evoke the physical signs of a chest full of fluid. Upon eliciting her history, it was very easy to arrive at a diagnosis of empyema of the left side, resulting from an acute attack of pleurisy with effusion, and perforating spontaneously behind the mamma, producing thus a variety of retro-mammary abscess. In her case the collection of pus behind the breast was removed by free incision at its lower border, but it required a rather extensive osteoplastic resection of the chest-wall before she finally and completely recovered.

Another and more remarkable case came under my observation in this



city some years ago. I was invited to see a colored man at the Almshouse Hospital, my interest being excited by the statement of the attending physician to the institution, that he had tapped his abdomen and drawn off nearly a pailful of pus. On careful examination and study of his history, I was convinced that he had had originally an empyema, which had separated the diaphragm from some of its attachment anteriorly, and had made its way downward. That a perforation into the general peritoneal cavity had occurred, seemed impossible, although the doctor's statement as to the result of aspiration was not to be doubted. I advised an operation, and was present a few days later when it was made. It consisted in a free incision in the middle line, by which it was found that the pus had separated the peritoneum from its subserous attachments to the transversalis fascia over nearly the entire surface, and had burrowed down into the pelvis even, so that there was a large pocket of pus outside the peritoneum and on each side of the bladder. It was then seen that the doctor's trocar had simply penetrated into the enormous collection without touching the peritoneum, and that there was no pus in the peritoneal sac. This large cavity was cleansed and drained as well as possible, and closed, the patient doing well for a few days, but finally succumbing to an acute attack of pleurisy on the other side, as was shown by the autopsy. The post-mortem dissection revealed the existence of an old empyema and perforation, as I have outlined. This is the most remarkable illustration of extension from an original empyema of which my experience or reading affords me any knowledge. When such a case as this is possible, you need not be surprised at hearing of perforation through the diaphragm at some point or other or into some portion of the alimentary tract.

But to return to the patient before us. His condition is regarded by my colleagues and myself as very grave. His heart-action is feeble, his respiration is much embarrassed, and there is some reason to fear that an anæsthetic might be fatal. On the other hand, there is a certainty of fatal result unless his condition can be materially improved, and, upon his assumption of the risk, I propose to make a free opening with resection of a rib. There is always difficulty in keeping an opening into the chest patulous for a sufficient length of time, and there have been devised a variety of appliances for securing permanent drainage, but they all appear to me to have their disadvantages, and I much prefer the removal of sufficient bone to permit free drainage by the ordinary conveniences. The patient has now been anæsthetized, and I purpose, as rapidly as possible, to remove from the eighth rib, a little behind the axillary line, a section about an inch and a half in length; and I shall do it by making an incision thus some three inches long over the lower border of the rib, scraping from it at this point its attached muscular fibres and periosteum, and then introducing under it a periosteal elevator by which the pleura and probably the periosteum are separated from its under and inner aspect. It is then a simple matter to slip one blade of the bone-cutting forceps beneath the rib and cut out the desired amount. Hemor-

rhage from the intercostal arteries is usually set forth as a great danger in resection of the ribs, but I have never found the slightest inconvenience from this source, since the groove along the inferior border of the rib in which the artery runs can be easily compressed by bone-pliers, inflicting the same injury on the vessel which we deliberately make with pressure-forceps in the soft parts. There is now between my finger and the pus only periosteum and pleura, which ordinarily are very thin, but which in cases like this are thickened to a considerable degree; in fact, in operating on cases of long standing, one frequently meets with a membrane half an inch or more in thickness but representing these two originally thin layers. A minute puncture permits a drop or two of pus to exude, and one need have no hesitation now in plunging in a knife and opening the pleura to the extent of the opening in the rib. As this is done there comes a gush of pus, and you see that there have flowed away about three pints of pus, for the most part creamy and of natural consistence, but with some shreds and caseous masses. It is free from odor, and I shall refrain from washing out this cavity, as one would ordinarily like to do, because I do not care to protract his stay upon the operating-table. Into this opening a short piece of very large drainage-tube is introduced, and kept from slipping beyond reach by means of a large safety-pin. Around it gauze is packed, and over this a copious dressing, for the most part consisting of bags of wood-wool, is applied. Now that the heart is permitted to return more nearly to its proper position, and the lung freed from the pressure that was made upon it, you will observe that his respiration is more full and satisfactory than before he commenced taking the anæsthetic. His pulse also is improved in volume and in strength.

Did time permit, I should like to say to you more about the anatomical condition met with in some of these cases, especially concerning what may be called multilocular empyema or encysted and localized collections of pus between the lung and chest-wall. This must be deferred until another occasion, as also remarks upon what may be done in long-standing or inveterate cases, particularly in those in which perforation has already occurred. This subject must be for the present dismissed, with the remark that these are the cases *par excellence* where brilliant results are obtained by the removal of so much of the chest-wall as shall permit it to collapse and meet the lung, which is incapable now of anything like complete expansion. These are the so-called thoraco-plastic operations, with which the name of Estlander must always be honorably associated. Doubtless at some time during the session we shall have an opportunity to witness the benefit that such operations may confer.

[Clinic three weeks later.]

It affords me great pleasure in showing you now the same patient whom you saw operated upon for empyema, and whose earlier history was one of subphrenic abscess. He now walks into the room, removes his own clothing, and permits the inspection of his chest. You observe that there is now but little pus upon the dressing, and you hear the report that in all scarcely two



ounces of pus are discharged in the twenty-four hours. The drainage-tube was removed some two weeks after its insertion, and a plug of antiseptic gauze is now used for the same purpose. Even this can now be inserted only with difficulty. It is a mistake in such cases to retain any drainage arrangements for too long a time, but the indications for its removal in any given case are to be recognized by the good judgment of the surgeon having that particular case in charge. In general, one must be guided by the evidence of lung expansion and the completeness of lung function, by the amount of the discharge, the appearance of the wound, and the general condition of the patient. Fair respiratory sounds are now heard over nearly all the proper area in this case, and, in my judgment, we shall in a very few days be able to permit this wound to close spontaneously. Such a case as this is a practical illustration of redemption from the grave by modern surgical procedures.

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### *A CASE OF GASTRIC (?) ULCER.*

CLINICAL LECTURE DELIVERED AT THE MONTREAL GENERAL HOSPITAL.

BY RICHARD LEA MACDONNELL, B.A., M.D.,<sup>1</sup>

Professor of Clinical Medicine in McGill University ; Physician to the Montreal General Hospital.

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THIS patient, James V., was sent from the country for advice and treatment. We will consider fully his history and symptoms and discuss the diagnosis. He is a farmer, aged thirty-one, unmarried, and up to about four years ago his health was very good, though he tells me that he was never a strong man. He began at that time to get thin and to suffer from constipation and loss of appetite. The loss of weight does not appear at first to have been persistent, for what he lost in the summer he regained in the winter, a state of things not uncommon in this country with our hot summers and cold winters. No urgent gastric symptoms were present for the first two years after his health began to fail. On a certain day two years ago, the date of which he can recall, gastric symptoms of unusual severity set in. He tells me that, having been invited to a "paring-bee," he had eaten a very large number of apples of a quality which he described as "very ordinary." He cannot remember how many he ate, the conversational attractions of the entertainment being so great, but he knows that he took a very large number. Large quantities of "pie" were simultaneously consumed, and the mass was washed down by copious draughts of hot coffee. He expresses himself as having enjoyed this entertainment greatly, but an hour or two afterwards there was severe pain in the epigastrium, which soon became almost unbearable and was relieved by vomiting. Since then the stomach has always been troublesome. He has suffered from pain after

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<sup>1</sup> Since deceased.

eating until the present date, from vomiting, and on a few occasions from hæmatemesis and melæna. In addition to these very significant symptoms there have been progressive emaciation, constipation, and excessive thirst.

Now, inasmuch as our diagnosis depends altogether upon the history, we must examine closely into these important symptoms and see what can be made of them.

The pain complained of was not constantly present. It began to be felt after taking food. It was very severe while it lasted. It varied with the diet. When he attempted a full meal the pain was sure to be felt, but when he put himself upon a milk diet he suffered from no pain at all. The intensity of the pain increased until vomiting occurred, and then relief came, though somewhat slowly.

Vomiting at first occurred in connection with the pain, and the vomited matter consisted merely of the food taken. At a later date he began to notice that the substances brought up were very sour, the quantity ejected was large, and the remains of food eaten twenty-four hours previously were distinctly recognizable.

Actual hæmatemesis has never occurred. But about a year ago he had been instructed by a medical man in the use of the stomach-tube, and was in the habit of washing out his own stomach every day. One day at this period of the illness, he was driving in his buggy over a rough road, when he began suddenly to feel very faint, and to suffer from oppression at the pit of the stomach. On his arrival at his home, it occurred to him that the introduction of the tube might relieve him. The outflow was almost pure blood, mixed with fragments of the food he had last eaten. A few hours after this he passed *per rectum* a large quantity of dark tarry fæces. On two occasions since this attack he has passed a quantity of such fæces, but at no period has he ever actually vomited blood.

During the last few months he has been comparatively free from pain, and he has not vomited for more than a week previous to admission.

*Present Condition.*—You can see that he is very pale and extremely emaciated. Now that he is undressed, observe the scaphoid abdomen. There is no case of phthisis in the hospital in which emaciation has advanced to such a degree. This condition is essentially different, however, from that of a phthisical patient. The chest, though thinly covered, is well shaped, and when he takes a long breath one is surprised to see the thorax expand so well. The skin is universally shrunken and of a waxy hue. The abdomen is scaphoid, and there seems to be no subcutaneous fat in its walls. The pulsations of the abdominal aorta are visible. On another occasion when he was being examined in the ward there was a tumor visible at the left of the umbilicus. This was probably due to the contraction of the segment of the rectus abdominis. We have seen these muscular or phantom tumors before in this session. One of the patients in Ward 24, a highly neurotic female, the subject of what was supposed to be gastric neurosis, presented in a remarkable degree these phantom tumors. In her case they were large



and well-defined, hard, resisting masses the size of half a cricket-ball. While examining the first one of these we saw it disappear like magic, but another appeared immediately higher up upon the abdomen. In our patient here there was no such marked manifestation, the elevation of the skin was barely sufficient to make the contracted muscle visible. I have applied the term phantom tumors to these muscular contractions incorrectly, for the term is limited to those peculiar simulations of abdominal disease or pregnancy peculiar to hysterical women. What we have here is more an excess of normal abdominal reflex. Increased epigastric reflex has before this been observed in connection with gastric disorders. I pointed out to you in my didactic lectures the nervous connection between the skin of the epigastrium and the stomach, and if sensory impressions can be so vividly transmitted from the mucous membrane to limited areas of skin, as we see in gastric ulcer, why should not motor impulses be transmitted to the ends of the motor filaments of the intercostal nerves embedded in the bellies of the rectus?

We also noticed yesterday that when the diaphragm descended in inspiration something moved down under the thin abdominal wall from about two inches above the umbilicus to very near that point. I am inclined to think that this was the colon, with the stomach above and the omentum below, that curtain which we lift up when in dissection we open the abdomen and study the folds of the peritoneum.

When the hand is placed upon the abdomen the lumbar part of the vertebral column feels as if it were separated by a very thin abdominal wall, and so it is even in those in whom the belly-wall is well developed. The lumbar vertebræ at the umbilicus are quite close to the surface. You can observe this in a frozen section of the human body. In a well-developed, muscular man the distance from the body of the third or fourth lumbar vertebra to the surface is generally less than two inches. The small intestines are generally tucked away at either side of the vertebral column so that a stab in the middle line would not wound them.<sup>1</sup>

The pulsations of the aorta are very distinctly felt. You can imagine how very easily pulsation could be communicated to one of these muscular tumors I have been talking about. Abdominal aneurism is a dangerous diagnosis for a beginner to make. At present the examination by palpation yields, as far as the existence of a tumor can be proved, negative results. Yesterday and the day before hard lumps were felt in the abdomen, undoubtedly fecal masses in the intestines. One of these masses was several inches long, cylindrical in outline, and lay across the vertebral column just above the navel. This was evidently the transverse colon loaded with fæces. As a preliminary to to-day's examination I had the bowels cleaned out with castor oil. I should advise you, as a matter of routine, never to undertake

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<sup>1</sup> A needle pushed horizontally into the abdomen at the umbilicus will most likely wound the great omentum, the transverse colon at its lowermost part, pierce the mesentery, possibly touch the superior mesenteric artery, the aorta, and penetrate the disk between the third and fourth lumbar vertebræ.

to give a final diagnosis of an abdominal tumor without having the bowels cleared. Under the beneficent action of this time-honored drug I have seen abdominal tumors, enlarged spleens, even pregnant wombs disappear. And it is not long since that a case of cancer of the rectum, which gave rise to a hard tumor in the pelvis, was completely cured by this simple means. Impacted fæces are a common cause of error in diagnosis and treatment, and you must remember that there are cases where diarrhoea, associated with a dribbling of mucus, is the only symptom complained of, when the real cause of the trouble is a mass of hardened fæces.

The stomach to which we particularly direct attention shows no sign of being distended. If it be dilated it does not show any evidence of that condition. The epigastric and left hypochondriac regions are not prominent but somewhat indrawn.

Neither liver nor spleen shows any evidence of enlargement.

Emaciation is extreme. The body weight before the illness began was one hundred and thirty pounds; it is now seventy-seven pounds. The physical signs of the lungs and heart are negative. The urine contains neither albumin nor sugar.

These are the facts of the case: the discussion of the diagnosis is now in order. The history and the symptoms point to gastric ulcer, but we must weigh fully the evidence in favor of other conditions.

There are three diseases which, in my opinion, must be thought of: 1. Gastric or duodenal ulcer. 2. Gastric cancer. 3. Neurosis of the stomach.

*Is it gastric ulcer?* We have seen cases of this disease quite recently. Last week we examined two cases. One of them, that of the elderly female who described her symptoms so graphically, resembles this in its course. She had pain, vomiting, hæmatemesis thirteen years ago, and now suffers from dyspeptic symptoms with copious vomiting. Her abdomen is in the same empty condition as the one before us. The vertebral column was almost as palpable, the abdominal aorta was quite as prominent. We had no hesitation, therefore, in making a diagnosis of pyloric obstruction. So in this case we must consider whether such a diagnosis could be made. The steps in the problem are: 1. Is there evidence of ulcer? 2. Is there any evidence pointing to the site?

The three main symptoms of ulcer of the stomach are: 1. Pain at the epigastrium. 2. Vomiting after food. 3. Hæmatemesis. Of these the most valuable is the last named. All three were present and in characteristic form. The pain was severe; it was situated in the epigastrium; the ingestion of food increased it; vomiting gave relief. As for the vomiting it came on only after attacks of pain, but afterwards it occurred without severe pain, and it was copious and delayed,—that is to say, the vomited matters contained food which had been taken twenty-four hours previously.

The history of hæmatemesis is clearly given, and I see no reason for disbelieving the man. It is not uncommon for the blood from gastric ulcers to pass on into the intestine without being vomited at all, and this



would probably have been the case with him had he not withdrawn the freshly effused blood with his stomach-tube. The subsequent attacks of melæna without vomiting point to this explanation of the first attack. These large hemorrhages are characteristic of ulcer of the stomach and form one of the diagnostic distinctions between ulcer and cancer. The passage of blood by the bowel in gastric ulcer is not an uncommon occurrence. When passed on all occasions by the bowel it supplies evidence in favor of the ulcer being situated in the duodenum, and this brings us to the question of the site of the disease. What evidence is there to point to the site of the disease?

1. There is the general tendency of gastric ulcer to take a position near the pylorus.

2. The age of the patient (thirty-one) does not assist us.

3. Gastric ulcer is a common disease. We have had three cases in the wards during the last six weeks. Duodenal ulcer is extremely rare.

4. The only evidence which can be adduced in favor of the duodenum is the downward course of the blood, and the fact that there has never been vomiting of blood. Still the blood has been in the stomach.

5. Against the possibility of duodenal ulcer is the history of pain in the epigastrium, and that pain relieved by vomiting.

6. The ulcer is near the pylorus because pyloric obstruction was a very early symptom. Two facts point in this direction.

(1) The history of delayed vomiting.

(2) The story of his having used the stomach-tube on the recommendation of the medical man in attendance, shows that here was probably accumulated vomiting. Just at present there is nothing to show that there is pyloric obstruction. He is being fed upon very small quantities of food, and the stomach is in no way taxed, but if he were to attempt the stomach digestion of ordinary food, it is more than probable that pain and vomiting would return.

*Is it gastric cancer?* It might be urged that this emaciation is more likely to be caused by malignant disease. But we have seen one other stomach case in which there was emaciation almost as extreme, and there certainly was no question there of malignancy. I allude to Margaret B., Ward 24, whose history has been already cited. The following are reasons strong enough to exclude malignant disease:

1. The symptoms have lasted too long for a diagnosis of cancer to be made. Dyspeptic symptoms of a mild kind with emaciation have been present for four years, while for the last two years severe symptoms have been present. Eighteen months is a maximum limit for cases of gastric cancer to live, and this is especially the case when the disease is in the pylorus. You remember two cases we studied last year. One man, a Swedish carpenter, was in the hospital three months before he died. The total duration was seven months. In the other case the downward progress was much more rapid, the patient dying in less than two months after he began to feel ill. While under observation he lost a stone in weight in ten days.

I gave a clinical lecture on these two cases last year, and pointed out that in both cases the final symptoms were those of starvation, and I compared the reports furnished me by the clinical clerks with the reports of the deaths by starvation which occurred in the Greely expedition. In both these cases the disease was in the pylorus, and in the more acute one the pylorus was constricted to the size of a No. 10 or 12 English catheter.

The expiration of the time limit is the strongest argument against malignancy.

I have not yet tested the gastric contents for hydrochloric acid. It has been stated that hydrochloric acid is not present in fluids abstracted or ejected from a cancerous stomach. The test is not fully established, so I shall not use its evidence in our diagnosis. And for the same reason I shall pass over the salol and other tests for motor insufficiency of the stomach. We shall try them all and report on them at a later date.

Lastly, we must bear in mind that gastric cancer may engraft itself upon an old ulcer, and in that case the diagnosis would be very difficult to make with accuracy.

Summing all up, I think you will agree with me in the diagnosis of gastric ulcer, possibly cicatrized, situated at or near the pylorus in such a manner as to produce a moderate degree of obstruction and possibly some dilatation.

2. *The Age of the Patient.*—As a general rule, cancer is rare under forty.

3. *The Character of the Symptoms.*—Were it cancer we should hardly find the pain and vomiting becoming less as time wore on.

4. The passage of blood in large quantities is not common in cancer. I have seen a case of scirrhus of the middle of the stomach in which blood in considerable quantity was passed by the bowel, and the disease for this reason was supposed to be situated beyond the stomach.

5. *No Tumor can be Felt.*—In this thin abdomen a thickened pylorus or a cancerous mass in the neighborhood could be detected readily, though the fact of our not having detected one is not a proof that none exists. If we found a tumor which we could not account for in any other way, its presence along with emaciation would be conclusive evidence of malignancy.

6. There is no evidence of cancer in other parts of the body.

Some one asks whether the whole disease might not be a neurosis. The history of hæmatemesis, which we can hardly ignore, does away with this diagnosis. The history of pain only after food, relieved by vomiting, as well as the history of delayed vomiting, are against this idea. I am glad, however, that it has been suggested, because neuroses of the stomach are not uncommon even in the male sex.

But a few minutes are left to speak of the treatment. Whatever the exact diagnosis may be, it is plain that the emaciation must be checked. I find he can digest raw meat, and I began with small quantities of this with peptonized milk. I tried cod-liver oil emulsified in Apohagui water, and this succeeded. There has been no pain or vomiting since admission. To-day we begin the administration of nutrient enemata. He is getting no medicine.



# REVIEW OF MEDICINE.

## MEDICINE.

IN CHARGE OF JUDSON DALAND, M.D.,

Instructor in Clinical Medicine and Lecturer on Physical Diagnosis and Symptomatology in the University of Pennsylvania, and Assistant Visiting Physician to the University Hospital.

ASSISTED BY

JOSEPH P. TUNIS, M.D.,

Philadelphia.

The Causation and Treatment of Chronic Diarrhœa. (*Medical Record*, New York, March 26, 1892, p. 340.)

Dr. W. W. Van Valzah writes: "A very large percentage of all cases of chronic diarrhœa find their origin in derangement of one of three great processes of nutrition,—digestion, absorption, and metabolism."

As a result of repeated attacks of acute diarrhœa the chronic form is developed, with or without intestinal ulceration. The symptoms are persistent pain, abdominal tenderness, and fever. Examination of the stools shows quantities of epithelium, mucus, unaltered bile-pigment, pus, blood, false membrane, or pieces of the softened mucous membrane, and leaves no doubt as to the existence of organic change. Ulceration of the intestine may be simple, syphilitic, tubercular, or malignant. In the *treatment* the indications are:

1. To cleanse the alimentary canal and keep its contents sweet.
2. To secure perfect digestion of the food taken.
3. To promote absorption.
4. To diminish the work of the diseased part.
5. To treat the lesions.
6. To treat the sequelæ.
7. To control the harmful symptoms.

Podophyllin, ipecac, salicylate of sodium (or, better, salicin and bicarbonate of sodium), the bichloride and the biniodide of mercury are the most useful cholagogues. Copious draughts of hot water are very efficient in washing away the bile and clearing out mucus and *débris* from the stomach. The writer regards salol as by far the best duodenal antiseptic. Subnitrate of bismuth reaches the large bowel, but is not of much value unless given in very large doses. Strict attention should be paid to the drinking-water and to the diet. The value of rest cannot be over-estimated in its beneficial

results. If the stools are frequent and exhausting, absolute rest in bed must be enjoined; during convalescence moderate exercise and fresh air will hasten the cure.

**Ehrlich's Test of the Urine in Typhoid Fever.** (*Medical News*, April 2, 1892, p. 365.)—Arthur R. Edwards, A.M., M.D., of Chicago Ill., formulates his results from careful analyses at some length. The test was tried in one hundred and thirty cases of typhoid fever, and shown to be very unreliable. In two undoubted cases of the disease the reaction could not be obtained, nor did the test bear any relation to the ultimate result. It was equally pronounced in fatal cases and in those that recovered. It is found in many other diseases, some of which, in certain clinical features, may simulate typhoid,—*e.g.*, septicæmia, uræmia, tuberculosis in its varied aspects, as well as enteritis, malaria, and pneumonia. It fails when most keenly wanted, and may be absent in a typical case of typhoid fever. The sulphanilic acid test may therefore, with good reason, be considered as altogether untrustworthy.

**Lavage.** (*University Medical Magazine*, April, 1892, page 493.)—Dr. A. L. Benedict writes with reference to the usefulness of this procedure and the contra-indications to its employment. In cases where it is necessary to remove the gastric contents for purposes of examination, many prefer “the stomach-bucket or a small sponge attached to a cord.” In atonic dyspepsias, when the only object is to stimulate the muscular or glandular apparatus, it is questionable whether the drinking of hot, weak, alkaline solutions will not accomplish the same result as lavage, without the inconvenience which the employment of the latter process necessitates.

Lavage should be practised, not because it is “good for dyspepsia,” but because there is some definite end, either diagnostic or therapeutic, in view. It is useful in widely different conditions, but subject to the limitations of a discriminating consideration of the state of the stomach and a prudent regard for the strength and nervous susceptibility of the patient.

**Some of the Dangers of washing out the Stomach.** (*The Practitioner*, April, 1892, page 241.)—Dr. W. Soltan Fenwick, of London, has prepared an excellent article on this subject. He considers lavage to be invaluable when employed in a rational way, but as soon as the boundaries of its sphere of usefulness have been overstepped, just so soon will the method prove a bane instead of boon, and men will awake to the fact that the use of the stomach-douche is, after all, not so totally devoid of danger as it appears.

The complications which may arise are :

1. Convulsions and tetany.
2. Syncope and sudden death.
3. Perforation.



4. Hemorrhage.

5. Injury (by traumatism).

6. Poisoning (by absorption from antiseptic solutions).

The writer mentions several cases in practical illustration of these dangers, and concludes by saying:

“At the present day every imaginable symptom that can in any way be connected with the digestive organs is immediately considered as an indication for the use of lavage, and we find that not only are chlorosis, atonic dyspepsia, and the gastric crises of ataxia subjected to this treatment, but even cases of reflex vomiting are supposed by some to necessitate the employment of the douche. But it is obvious that in those cases where the treatment fails to do good, it is extremely likely to do harm, since, as Leube pointed out, it has the effect of removing those products of digestion whose manufacture has caused the stomach a considerable amount of labor. For my own part, I fail to understand how washing out the organ in a case where the amount of secretion proves insufficient can possibly increase the digestive powers.

“The few cases of atonic dyspepsia and chlorosis which I have treated by lavage have, without exception, proved exceedingly rebellious, and only improved when subjected to the more ordinary course of medical treatment. I would, therefore, conclude by saying that, although lavage is an invaluable remedy in certain cases of gastric disease, its indiscriminate employment in every case of disorder of digestion will prove a curse rather than a benefit, and will eventually throw discredit upon the whole method of treatment.”

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## THERAPEUTICS.

IN CHARGE OF ALEXANDER D. BLACKADER, B.A., M.D.,  
Professor of Therapeutics, McGill University, Montreal, Canada.

The New Salts of Calcium in Therapeutics. (*Les Nouveaux Sels de Calcium en Thérapeutique. La Médecine Moderne*, March 10, 1892.)

Prof. Sée, in a long address before the Academy of Medicine, endeavors to prove the great superiority that the halogen salts of calcium have over those of potassium and sodium, and over the ordinary preparations of lime. His conclusions are stated as follows:

1. To introduce lime in the most satisfactory manner into the system the salts of calcium, the bromide, and especially the chloride of calcium, which contains more than a third of calcium, should be prescribed. The usual preparations of lime are uncertain, because they are absorbable in the smallest quantity only. They are eliminated in very minute quantity by the kidneys, proving that they have been present in the blood in very small amounts, while the great bulk of them passes unchanged through the intestines without producing any effect.

2. The iodide and bromide of calcium are the salts which are specially indicated when we desire to produce the effects of iodine and bromine on the economy. The amount of iodine and bromine in them is larger than in any other salt, while the calcium contained in them has neither the active, and often injurious, effects of potassium, nor the inactivity of sodium.

3. The bromide and chloride of calcium are very serviceable in many cases of dyspepsia and of gastric affections.

4. It is, moreover, the calcium which acts favorably upon the stomach when the iodide of calcium is substituted for the iodide of potassium. Both these drugs have a very happy action on the respiration, on the heart's action, and on specific complaints; but the iodide of calcium, of which the dose is smaller, is well borne by the digestive organs, while potassium is manifestly prejudicial to them. While each of the halogen salts of calcium have a special indication of their own, they have also a common indication in gastric therapeutics. This remarkable property is maintained by them all.

Treatment of Inoperable Malignant Neoplasms by the Aniline Dyes. By Prof. Dr. R. von Mosetig-Moorhof, Vienna (*Wiener Klinik*, January, 1892), translated by F. F. Burghard, F.R.C.S., England (*Lancet*, February 20, 1892).

In this paper Professor Mosetig-Moorhof gives us the results he has obtained up to the present time in the treatment of malignant growths, too advanced for operative relief, by the injection of aniline dyes. Professor Stilling's pyoktanin (Merck's) was principally used, owing to its combining a certain amount of antiseptic power with a high degree of innocuousness. The technique is given as follows: A special syringe, holding from thirty to forty drops, is used with long, wide canulæ, some of which are specially curved for injections into the tongue. The most careful aseptic precautions must be employed in every stage. An aqueous solution, carefully filtered through asbestos, and not more concentrated than one in five hundred, is used to avoid any tendency to precipitation. The canula should be plunged in deeply through the healthy skin immediately beyond the tumor, and then directed towards the edge of the growth. After it has penetrated this, the solution should be slowly injected. As much as from thirty drops to six drachms of the above solution may be injected at one sitting, the injection being made at one spot or at several, as may seem necessary. If ulceration be present, the injections must be made deeper, and at a greater distance, as there is liable to be an escape of the fluid from the surface of the ulcer. In cancer of the tongue it is important not to inject through the floor of the ulcer, lest septic cellulitis ensue. Professor Mosetig-Moorhof affirms that, in his experience, there is no danger of coagulation occurring, even if, by accident, the drug be injected directly into the blood-stream. The harder varieties of sarcomata are more likely to derive benefit than the softer and more rapidly-growing ones. Inflammation never occurs unless septic material be introduced with the canula. Some local oedema may occur and persist for a few



days. Pain is rarely felt for more than a few minutes. The benefits are thus enumerated: Pain is relieved, the general health is improved, and the patient becomes more cheerful. There is frequently distinct shrinking of the tumor. Even in the softest and most rapidly-growing sarcomata some retardation may be effected, and, perhaps, some diminution of bulk. Secondly-affected glands may shrink as a result of injections into the primary growth. Actual cicatrization in cases of ulcers may sometimes be obtained. Sufficient time has not yet elapsed to enable any opinion to be formed as to relapses. The treatment should only be used in those cases that are beyond the reach of operation. It cannot harm, and may do much good.

**The Use of Chloral in the Treatment of Boils.** (Le Chloral contre les Furoncles. *Bull. Gén. de Thérapeutique*, March 25, 1892.) By M. Spehn.

The author recommends very highly as far superior to all other treatment the use of chloral externally in this troublesome class of affections. He directs that the boil be kept covered with a tampon of cotton-wool soaked in the following solution:

R Chloral hydrat., 3iiss;  
Aquaë,  
Glycerin., aa f3v.—M.

**Treatment of Convulsions by Compression of the Carotids.** (Traitement des Convulsions par la Compression de la Carotide. *Supplement au Bull. Gén. de Thérapeutique*, March 25, 1892.) By M. Roheim.

The author reports a case of eclampsia treated with success by this measure after other means had failed. The patient was a robust man, aged fifty-six, suffering from cancer of the bladder, with occasional hæmaturia. Pressure was made over the carotid, by means of the index and middle fingers, between the larynx and sterno-mastoid muscle, from before backward, against the vertebral column. He thinks the value of the treatment lies in the fact that, in compressing the carotid, we at the same time make pressure on a fasciculus of the sympathetic, which lies parallel to the artery.

**A Remarkable Case of Quinine Rash produced by a very Small Dose of the Drug.** (*Montreal Medical Journal*, March, 1892.)

Dr. F. J. Shepherd relates the case of a strong, robust man, aged forty-one, in whom three doses, five grains each, of citrate of iron and quinine produced a sensation of heat and soreness in the groins and inner side of the thighs, followed on the next morning by the appearance of large claret-colored patches over the seat of pain, and extending up the abdomen. The skin was swollen and tender, and in the centre of the patches purpuric spots could be seen. On the following day the feet and hands were affected. In ten days desquamation followed, the skin on the palms of the hands and soles of the feet coming away in one piece. As he had always perspired, a

great deal about the groins, the patient attributed the rash to this, although he thought the medicine had something to do with it. One month afterwards, feeling fagged out, he thought he would take a dose of his old medicine. The following morning the rash reappeared over the same spots, and ran a course somewhat similar to the first attack. In neither of the attacks was there any elevation of temperature, or other constitutional disturbance.

**Camphoric Acid in the Night-Sweats of Tuberculosis.** (*Medical News*, March 12, 1892.)—Dr. James Wood states that in a large number of cases he has used camphoric acid as an effective remedy for this unpleasant symptom in chronic pulmonary affections. It seems to produce this result with less derangement and more satisfactory and lasting results than does any other drug. The remedy is best given in doses of twenty grains, from four to six hours before the period of sweating is expected. The taste is not unpleasant, so that it may be given only on the tongue, and washed down with a little water. In many of his cases only a few doses were required to give prompt, and, in some instances, lasting, relief. After taking the camphoric acid, all of the patients were able to sleep better, and on awakening felt stronger and more refreshed.

**Chloroform in Enteric Fever.** (St. Petersburg *Medicinische Wochenschrift*, January, 1892; *Lancet*, March 12.)—Dr. P. Werner, of St. Petersburg, has treated one hundred and thirty cases of typhoid fever with a one-per-cent. solution of chloroform with much success. He was led to the use of this drug by the investigations of Behring as to the germicidal action of chloroform upon the typhoid bacillus. Dr. Werner administers of this one-per-cent. solution one tablespoonful every hour or two hours during the height of the disease. In all his cases, before the tenth day distinct improvement was manifested. Even when commenced as late as the third week, benefit resulted; but not much can be expected if the treatment be begun late in the illness. None of the cases died. The thirst was lessened, the tongue did not become brown, and diarrhoea and tympanitis gradually diminished and disappeared. The treatment was in most cases well borne, but in four cases slight jaundice, sufficient to cause a discontinuance of the drug, was observed. Dr. Steppe, of Nuremberg, used chloroform similarly in 1890. Both of these observers agree in recommending this treatment as worthy of a more extended trial.

**A New Treatment of Acute Gonorrhœa.** (*Lancet*, February 27, 1892.) By C. E. Cotes, F.R.C.S.

The writer thus describes his plan of treatment: The patient is first made to micturate, and thus remove the discharge from the urethra as far as possible. The endoscopic tube warmed and oiled is then passed into the urethra, the patient lying on a couch. As a rule, this gives rise to but slight pain, but in sensitive patients, or when the inflammation is very acute, the



previous injection of a ten-per-cent. solution of cocaine up the urethra will be found useful. The urethra is then to be thoroughly mopped with dry cotton-wool in a stilette, and examined by electric light. The implicated surface can be at once recognized by its appearance, and will be generally found to extend four or five inches back from the meatus, even as early as the third day. The endoscope is not to be passed much beyond this posterior limit. The surface should now be again cleansed with a mop of cotton; after this a clean mop charged with a solution of silver nitrate (ten grains to one ounce of water) is to be passed down just beyond the distal aperture of the tube. The mop and tube are then withdrawn simultaneously. A fresh mop is used for the anterior two inches, so as to saturate completely this portion, in which the disease commences and where the inflammation is most intense. The subsequent pain is not severe, and passes away in a few minutes. The patient is recommended to take a hot bath at night, and to remain quiet in bed the following day. The diet is regulated, and a saline purgative with an alkaline or copaiba mixture is given internally. In addition a mild cleansing solution (*e.g.*, Condyl's fluid, one drachm to one pint of water) is directed to be used frequently, six times a day or oftener, by means of a syringe that will hold only two drachms, each injection being retained fully half a minute within the urethra. In the first forty-eight hours a free purulent discharge takes place, which afterwards rapidly diminishes in amount, and usually disappears entirely in seven or ten days.

The noticeable points of this treatment are (1) that it remains in the hands of the surgeon; (2) that the urethra can be thoroughly cleansed, and the remedy applied directly to the part affected in its whole extent, with the furrows in the urethral wall obliterated by distention; (3) that there is no fear of the application carrying the infected material to the more distant parts of the urethra.

**On the Treatment of Chorea.** (*Sur le Traitement de la Chorée*, par L. Jumon. *La Médecine Moderne*, March 5, 1892.)—Dr. Jumon sums up an exhaustive article on the treatment of chorea by saying that there is no specific treatment; but that the remedies which have proved of most service are efficient when used under well-defined indications, and have each a definite stage when their beneficial effects are at a maximum. 1. In cases of ordinary chorea (*chorée vulgaire*), antipyrin and arsenic are the remedies which afford best results. 2. In chorea associated with rheumatism, antipyrin is again indicated; to it we may add salicylate of sodium; sulphurous baths will also prove very useful. 3. If the symptoms be dependent on hysteria, it is to the administration of the bromides, according to Dujardin-Beaumetz and Ollivier, that we must look for good results; although M. Sée fears the depression which always follows their employment. 4. In cardiac chorea we should avoid remedies that may prove injurious, and make use of chloral and hydrotherapeutics, and such cardiac tonics as iodide of potassium, and, better still, iodide of calcium. 5. In all simple cases gymnastic exercises

and such measures as fall under the term reconstructive, especially albuminous alimentation, will be indicated, and may sometimes be employed with success.

## NEUROLOGY.

IN CHARGE OF B. SACHS, M.D.,

Professor of Mental and Nervous Diseases in the New York Polyclinic; Neurologist to the Montefiore Home for Chronic Invalids; Consulting Neurologist to the Italian Home of New York City.

**Mental Affections after Influenza.** (*American Journal of the Medical Sciences*, April, 1892, page 361.)—Dr. Julius Althaus, of London, writes of the mental disturbances which occur after an attack of la grippe, when the patient has entered upon convalescence. The cases reported are grouped by him into four separate classes: first, neurasthenia, hypochondriasis, and melancholia; second, acute asthenic delirium, delirium of collapse, or, as he prefers to call it, the delirium of inanition; third, mental affection, grafted upon pre-existing neurosis; and, fourth, general paralysis of the insane.

It is difficult to determine the etiology of these conditions; but, in view of the facts that "the number of cases of psychoses observed after grippe is far greater than that seen after any other infectious disease," and that "there is a much greater variety of psychoses observed after grippe than is met with after other fevers," the writer believes himself justified in thinking that the peculiar toxine accompanying influenza has a more specifically noxious influence upon the nutrition of the cortex than other morbid poisons.

*Treatment.*—1. A nourishing and easily-digested diet, with a moderate amount of alcoholic stimulant, when there is loss of appetite and physical debility. (The latter would, of course, be contra-indicated in the fourth class.)

2. Rest, avoidance of excitement, and change of air and scene.

3. For the delirium of inanition and allied states, subcutaneous injections of morphine and atropine are useful.

4. Insomnia can be combated by prolonged warm baths, or, if necessary, by sulphonal and paraldehyde.

5. Anorexia, by bitter tonics.

6. General debility, by quinine, strychnine, and phosphorus.

7. Cardiac debility, by digitalis or strophanthus.

8. The action of the bowels, the skin, the liver, etc., must be carefully regulated.

9. The tone of the nervous centres may be much improved by judicious applications of the constant galvanic current applied especially to the pre-frontal lobes and the medulla oblongata—from one-half to two milliamperes—for between five and ten minutes, either daily or every other day.



*Echinococcus Multilocularis* of the Brain. (*American Journal of the Medical Sciences*, April, 1892, page 412.) By Dr. Henry H. Mudd.

The writer gives a detailed report of a girl, twelve years old, who came to St. Luke's Hospital, St. Louis, Mo., suffering from the symptoms of brain tumor. Just above the right ear a small elevation of bone, about the size of a silver quarter, was observed. The elevation of bone was distinctly separate from the skull and could be made to move at will. It was evident, from the history and the symptoms present, that some new growth had occurred underneath this portion of the skull. An operation was accordingly performed for its removal. The periosteum was closely adherent to the elevated area. The dura mater was attached to the bone loosely. There was no visible pulsation, but when this membrane was incised a clear watery fluid escaped. After enlarging the opening, several cysts of various sizes were removed with their contents. The excavation thus left in the brain was about as large as a hen's egg. The wound was dressed antiseptically, and the patient made a good recovery.

The specimen removed was carefully examined microscopically, and no doubt was left as to the nature of the growth. It is remarkable that a complete restoration to health should have followed such an extensive operation. The writer thinks that the parasitic growth probably started on the convexity of the brain, over the centre for the left wrist and fingers in the sub-arachnoidal space. The pressure of the tumor caused erosion of the skull and protrusion of the growth. The symptoms observed were partial paralysis, choked disk, and headache. The writer attributes the fact that some vision still remains after the operation to the circumstance that oedema of the brain was only commencing, and was prevented by surgical interference from further development, which must have ended in death.

*Tumors of the Cerebellum.* (*Journal of Mental and Nervous Diseases*, April, 1892, page 257.) By Dr. G. J. Preston.

The writer states that a careful review of the reported cases of the past half-dozen years will show how entirely possible it is definitely to localize new growths of the cerebellum. The relative frequency of the occurrence of these growths, as compared with those in the cerebrum, is larger than would at first thought be considered possible. In six hundred and fifty cases of intracranial growths, reported by Gowers, two hundred and ninety-five were in the cerebrum and one hundred and seventy-nine in the cerebellum.

Tumor of the cerebellum may occur at any age, though perhaps it is more common in early adult life. Tubercular and syphilitic deposits, glioma, carcinoma, parasitic cysts, fibroma, and other kinds of tumors are found among these new growths. Tubercular growths are more frequently found in the cerebellum than in other parts of the brain, and are met especially in children. The symptoms are pain, sometimes of a dull boring character, at other times a most intense agony, the most notable feature of

which is its constancy. When, therefore, a patient complains of persistent pain in the head for months, tumor of the brain is always suggested. In a very considerable proportion of cases where the cerebellum is the seat of trouble, the pain is distinctly occipital, and is often felt in the back of the neck. This may be due to direct pressure upon the tentorium. Localized tenderness can often be elicited by percussion, if carefully performed. Another symptom common to all intracranial growths is optic neuritis. Then there is the peculiar staggering, drunken gait,—the characteristic cerebellar titubation. Disturbance of equilibrium results, according to Nothnagel, only when the middle lobe is involved or compressed. In some cases of cerebellar tumor *muscular weakness* is decided, but distinct hemiplegia is not common.

The deep and superficial reflexes are, as a rule, unaltered, though there are many exceptions to this, since we may have the motor track involved. A symptom not generally mentioned is loss of muscular sense. The writer regards *optic neuritis* as the most valuable symptom of intracranial growths, although tumors of considerable size may be present unaccompanied by this symptom. Other symptoms are also mentioned of less importance. The results in nearly all cases are progressively and rapidly fatal: two years might be put as the average limit. While a considerable number of tumors have been successfully removed from other parts of the brain, and even from the cord, no operation has as yet been performed successfully upon a tumor of the cerebellum. The writer's own cases showed, on post-mortem examination, conditions favorable to the removal of the growths, and other cases can be found in medical literature. From these facts the writer concludes: first, that tumors of the cerebellum can be localized with a reasonable exactness, and, second, that operation, offering as it does the sole chance for relief, should be more frequently resorted to.

Report on the Care and Treatment of the Insane. (*Montreal Medical Journal*, March, 1892, page 657.)—Dr. E. E. Duquet gives in considerable detail the report of the Medico-Psychological Association of Great Britain and Ireland on the care and treatment of the insane. Regarding insanity generally, the report concludes:

1. Insanity is a symptom of a physical disorder, and results from derangement, either primary or secondary, of the nerve-centres.

2. It may originate from mental or physical causes, or from both combined. Most frequently it is due to inherited instability, undue worry in daily life, excesses, or disease in the brain or other organs disturbing it.

3. Marriage into a family mentally unstable is a great risk; and the marriage of two persons from such families is much to be deprecated, since it tends to induce insanity in the offspring.

4. Insanity can be lessened by the avoidance of unwise marriages, by careful obedience to physiological laws, by moderation in all things, by judicious training and education, both mental and physical, in youth, by



adopting such conditions of life and occupation as counteract morbid tendencies, and by the preservation of a calm and equal mind amid the cares and perplexities of life. Other clauses, to the number of thirty-two, provide for the treatment of patients in institutions, where home treatment is not possible or is inconvenient, and special stress is laid upon the training and education of attendants.

## PEDIATRICS.

IN CHARGE OF F. FORCHHEIMER, M.D.,

Professor of Physiology and Clinical Diseases of Children, Medical College of Ohio, etc.

The Mouth-Plague in Man (Stomatitis Epidemica); its Identity with the Foot- and Mouth-Disease of Domestic Animals, and the Cause Common to both Diseases. (Die Mundseuche des Menschen (Stomatitis epidemica), deren Identität mit der Mund- und Klauenseuche der Haustiere und beider Krankheiten gemeinsamer Erreger.) — Dr. Siegel (*Deutsche Medizinische Wochenschrift*, No. 49, December 3, 1891) says,—

This epidemic lasted from the autumn of 1888 until the middle of January, 1891. It occurred in one of the suburbs of Berlin (Rixdorf) and a village connected with it (Britz), both together having about nine thousand inhabitants. The period of incubation lasts from eight to ten days, then comes the period of invasion, from three to eight days, accompanied by fever, not very high,  $39.8^{\circ}$  C., malaise, vertigo, pains in various parts of the body, constipation, sometimes jaundice. Then come the characteristic appearances in the mouth,—œdematous swelling of the tongue, which is coated yellow or black, the gums are swollen, especially between the teeth, the teeth loosened, producing wounds upon the swollen tongue. There is *foetor exore*, and the maxillary bone begins to be tender and swollen so that the face looks puffy. In most cases small vesicles appear upon the tongue and the lips, which break and leave ulcers of different sizes. Again, in most cases, an *exanthema* develops upon the leg or the forearm, consisting of *petechiæ* or vesicles filled with pus or bloody serum. In children it not infrequently extends over the whole body, and is then mistaken for measles. With this eruption, which may be absent in mild cases, the patient begins to improve, the mouth symptoms disappear after from one to two weeks' continuance, and there is left a feeling of lassitude and debility, accompanied by rheumatoid pains, which, again, last from four to eight weeks. This is the course of the disease in the majority of cases; in some, however, there are constant relapses, so that the whole duration of the disease may be from twelve to eighteen months. The cases vary in intensity, both as to local and general complications. Fatal local complications are, hemorrhages from the mouth or intestines; general disturbances (fatal), catarrhal pneumonia, tetanus, and cachexia. Hemorrhages were observed as in purpura, and examination of the blood showed leucocytosis.

Direct contagion was observed in two cases. Two-thirds of the inhabitants were affected, and in six months the author had recorded three hundred cases. The disease was more fatal in adults than in children; during the prevalence of this epidemic the mortality was three per cent., of which one-twelfth was due to the epidemic. The agent which produced the epidemic was found in the form of an ovoid bacillus,  $0.5\ \mu$  long, which was cultivated upon agar and gelatin and upon potatoes. This bacillus, in pure culture, was pathogenic in pigs and calves, and was found especially in the liver and spleen of human beings. In the lower animals, veterinary surgeons did not hesitate in pronouncing the disease produced by inoculation of pure cultures as the foot- and mouth-disease. At the same time an extensive and severe epidemic of foot- and mouth-disease prevailed among the cattle, and it was natural to suppose that the epidemic among human beings had its origin in the cows. But the author seems to prove that direct contact with cows produced the same effect as vaccinia,—viz., that the attendants were protected by vaccination with the poison direct from the cow. Cultures and inoculations with milk from diseased cows gave negative results, although the bacillus could be found in sheep and horses. The conclusion arrived at is that infection took place from man to man.

The new name is chosen because, as the author says, stomatitis aphthosa represents only the milder forms and scurvy only the severer ones. It seems, then, that we are, in certain instances, to look upon scurvy and aphthæ as manifestations of the same infection. It is, however, going too far to claim, as the author seems to do, that this is the case in all instances. However this may be, the above must be looked upon as a most valuable contribution to our knowledge of scurvy as well as of stomatitis aphthosa, and if, as the author seems to imply, the results have been verified by Miller, he is to be doubly congratulated upon having given us these positive data.

La Grippe in Children. (*Archives of Pediatrics*, March, 1892, page 161.) By Dr. Charles Warrington Earle, of Chicago.

The writer regards the disease as undoubtedly a general infection of the entire body. It takes possession of the system with such rapidity that it has been called by some writers "lightning catarrh." Nursing babies at four months of age felt its influence, while a large number were affected between the ages of one and three years. The details of eight interesting cases are given. In studying the etiology of this disease it was decided (1) to examine the secretions of the respiratory passages in all of the influenza patients, (2) to make control examinations, (3) to examine whether the blood contained micrococci, and (4) to attempt vaccinations on animals. The results were a demonstration of the micrococci in the nasal mucus and in the sputum of every case. Methyl-violet was used for staining. No micrococci were found by the control examinations, conducted upon persons suffering from ordinary "colds." The blood of the influenza patients showed no micro-organisms after careful examination. The



vaccinations were not successful. There is sufficient ground for belief, however, that a living micro-organism is responsible for the occurrence of influenza.

The writer observed redness of the face, with a tired or sleepy expression, together with congestion of all the mucous membranes, as frequent symptoms of this disease; or, on the other hand, an appearance of pallor and great depression, with a feeling of weariness. This last symptom was especially present among young and feeble children. Earache frequently occurred, no doubt due to the catarrhal condition of the upper air-passages. There was nothing characteristic about the temperature. The most frequent symptom was catarrh of the respiratory apparatus. The depression of the heart was usually out of proportion to all other symptoms. A loss of appetite often associated with vomiting was frequently noted. Diarrhoea was a troublesome symptom. Great irritability and fretfulness were almost always present, with sleeplessness at night and more or less excitement during the day. The most common complications were glandular enlargements and an occasional cellulitis. The differential diagnosis is not difficult. As to the prognosis and mortality, they differ, of course, with different epidemics. Death, however, is usually due to exhaustion. To avoid unpleasant after-effects great care should be exercised in husbanding the strength of the patient and employing a generous diet. The writer has found nothing so good for the general pains as phenacetin, either alone or in combination with salicylate of sodium, or, in selected cases, moderate doses of antipyrin. For the depression, milk-punch, small doses of quinine, and a generous diet. The writer strongly advises the early use of equal parts of whipped egg albumen and sterilized water, with a little brandy and sugar, varying the amount of alcohol according to the age of the patient, to be given frequently.

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## SURGERY.

IN CHARGE OF B. FARQUHAR CURTIS, M.D.,

Surgeon to St. Luke's Hospital and to the New York Cancer Hospital.

**Operations for Trigeminal Neuralgia.**—Horsley (*British Medical Journal*, 1891, ii. 1139, *sqq.*) describes the various methods of operative treatment for trigeminal neuralgia with considerable detail. Neurectomy is the only form of operation which gives lasting results, and a very large number of methods have been devised to reach the different branches of the nerve. The first division of the trigeminus is easily dealt with. The second division has had the largest number of operations planned for its extermination. Most frequently used is that of Wagner and Hildenbrant, incising the skin at the border of the orbit, lifting the eye, exposing the nerve in the infra-orbital canal, and resecting all that can be reached.

More thorough is the operation of Carnochan, especially by the modification adopted by Chavasse and others, in order to avoid opening the mouth. A small flap is made over the infra-orbital foramen, the wall of the antrum cut away just below it, the nerve followed back along the wall of the antrum, the posterior wall perforated, and the nerve with the spheno-palatine ganglion attached divided at the foramen rotundum and removed. Many successes are now on record for this operation.

For the third division, of which the dental branch is the most frequently involved, there are also numerous methods of attack. The old operation through the mouth has practically been given up. The dental nerve has most frequently been reached by trephining the ramus, although Lücke and Sonnenburg have reached it by following the internal surface of the bone from an incision over the angle, the patient lying on the back with the head hanging down. Horsley prefers to reach it by a peculiar operation of his own, following the methods of Warren and Velpeau.

By the method suggested by Pancoast and improved by Salzer, Horsley has been able to trephine the skull and divide the nerve within it. The method consists in resecting the zygoma temporarily, turning it down, dividing the temporal muscle, and stripping it from the side and base of the skull, and removing its posterior portion together with part of the coronoid process. This should be tried if the first neurectomy fails. He has also exposed the Gasserian ganglion by turning down a large temporal flap, cutting away the temporal muscle, resecting the squamous portion of the temporal bone, opening the dura, and lifting the temporal lobe of the brain. He found, however, that it was impossible to remove the ganglion without too great injury to the sinus, and had to limit himself to section of the nerve or to evulsion of its root from the pons. He reports in all nineteen cases of trigeminal neuralgia, some with three operations, with good results. He does not appear to have tried Thiersch's method by evulsion of the proximal end of the nerve from rather superficial wounds.

Rose, in the Lettsomian Lectures, having given a *résumé* of the different methods of neurectomy for trigeminal neuralgia, adds to them a method for removing the Gasserian ganglion (*Lancet*, 1892, i. 295) which he has successfully employed in five cases, a sixth having also been successfully operated upon by Andrews, of Chicago. He resects the zygoma, turning it down, having first made a flap of skin from an incision running along the zygoma, the ramus of the jaw, and around the angle, with its base forward. The coronoid process is then divided, and either turned up with the temporal muscle or removed at once. The base of the skull is reached by blunt dissection, the internal maxillary being tied, and when the foramen ovale has been exposed, a disk of bone is removed just in front of it with a long-handled trephine. The dura is then separated from the skull, a layer of fibrous tissue divided, and after division of the root behind the ganglion, the latter is removed piecemeal with forceps or with a curette. The wound is closed without drainage. Trophic disturbances have been observed in the eye



subsequently, but in only one case was the eye lost,—the superior maxilla was also resected in this case, and the wound was not perfectly aseptic.

A Case of Tetanus treated by Tizzoni's Antitoxin. Recovery. (Ein Fall von Tetanus mit Tizzoni's Antitoxin behandelt. Genesung. *Wiener klin. Wochenschr.*, 1892, 1.) By Finotti.

The case was treated in Nicoladoni's clinic at Innsbruck. A boy, eleven years of age, having received a crush of the hand in a machine, was submitted to amputation just above the wrist, and the wound healed without reaction, but eight days later he complained of being unable to open his mouth, and on the following day dysphagia also appeared. It was then found that a piece of one of the amputation flaps had become gangrenous, but without any congestion of the surrounding skin. The gangrenous piece was removed, but on the following day well-marked symptoms of tetanus were present, and the arm was amputated at the middle. Cultures were made from the amputated tissues, but no tetanus-bacilli were obtained, and inoculation of three guinea-pigs also remained without result. The symptoms continued, and on the following day inoculations with Tizzoni's antitoxin (obtained from him) were begun. The patient at this time had opisthotonos and other symptoms of tetanus, pain in the wound, temperature 99.3° F., pulse 96. For two days there was no improvement, but then there was a slight fall in temperature, and the patient could sleep quietly. During the next three days, however, the patient grew slightly worse, and a stronger preparation was employed. This caused another fall in temperature, and the spasms, which were formerly caused by a touch, occurred only when attempts at voluntary motion were made. Four days later the patient had made decided improvement, and the following day the opisthotonos disappeared, so that on the next (the sixteenth of the illness and the fourteenth of the injections) the antitoxin was discontinued. On the twenty-fifth day the patient was allowed out of bed. Twenty-eight injections were given in all.

Tizzoni and Cattani established by experiment that some animals are able to resist the poison of tetanus, and that their blood is able to destroy the cultures of tetanus-bacilli and also to grant immunity to other animals more susceptible. Rabbits are more susceptible to tetanus than dogs, but when fortified by inoculation with weak cultures of the bacilli, antitoxin prepared from their blood-serum is more powerful than that from dogs. The antitoxin is an albuminous material, like the enzymes, partially soluble, and, in doses of two and one-half to three grains in about fifty minims of distilled water, is injected under the skin of the abdomen and extremities. There is some pain from the injection, and a profuse perspiration sometimes follows, but no other ill effects.

This makes the fourth case of recovery from tetanus treated by antitoxin, the others being those reported by Schwarz and Gagliardi, and an unreported case of Tizzoni's. The method, therefore, deserves careful consideration and further trial.

The Cerebral Atrophies of Childhood. (*Medical Record*, New York, 1892, 85.) By M. Allen Starr, M.D., Ph.D.

Starr considers the cerebral atrophy of children with especial reference to their operative treatment. He divides the cases into three classes: first, those with motor disturbances (paralysis, contracture, athetosis, etc.); second, those with mental defects (lack of development, idiocy, moral perversion, failure to learn to talk); and, third, those which present no motor or mental defects and yet show deficiency in some of the special senses (deaf-mutism, hemianopsia, etc.). Common to all classes is the occurrence of epilepsy. The lesions of these three classes of cases are usually about the same, differing only in their locality, those of the first type involving the motor region of the brain; those of the second, the anterior portions or the entire hemisphere; those of the third, the posterior or lateral divisions. The lesions are always of an atrophic nature, although their character varies, being sometimes cystic (proencephalus), sometimes sclerotic, sometimes maldevelopment only. The causes are softening by embolism or thrombosis, meningo-encephalitis, or pressure by cysts, clot, or hydrocephalus.

Only a few of these cases can be benefited by operation, as is evident at once from the pathology, and interference with some of the lesions has resulted in immediate death, as where a cyst has been opened by operation. The most promising cases are those of maldevelopment, for the operation may remove some cause which hinders growth, or may act as a stimulant. In cases of simple maldevelopment there is often a flattening of the skull at the undeveloped region, as if the growth of the brain beneath were necessary to cause proper growth in the bones. Unfortunately, it is impossible to say without exploration which of these conditions is present, so that any operation must, in the first place, be exploratory. The results hitherto obtained are not very encouraging. Leaving aside the vaguely-reported cases of Lannelongue (twenty-five cases, chiefly microcephalous, with one death, and general improvement), there are twenty-three cases on record, with eight deaths.

Starr adds two cases of his own operated upon by McBurney and by Hartley, both with marked improvement during the nine and six months after the operation. In neither case was any gross lesion found, and the operation was merely exploratory, except that the large opening made in the skull was left open, and may have acted as a safety-valve for intra-cranial pressure.

Two Cases of Pyæmia, following Suppuration of the Middle Ear, treated by Ligation of the Internal Jugular Vein and cleaning out the Lateral Sinus. By Rushton Parker, M.B., B.S., F.R.C.S.

One case was successful, the other died, apparently of meningitis, three days after the operation. The first case was a man, twenty-five years of age, with a temperature of 105° F., fetid pus discharging from the left ear, but no swelling or tenderness of the mastoid, although both were observed in the neck just below. Repeated rigors and obstinate vomiting were also



present. The symptoms had existed for eleven days. The vein was excised from below the entrance of the facial into the jugular, to within one inch of the skull, and contained purulent blood-clots. The mastoid was chiselled, the lateral sinus opened, and the thrombus found and then removed, so that it could be irrigated through from below. Two days later, the symptoms having returned after a temporary improvement, the mastoid was more freely opened, bringing about a cure in a fortnight. In this case there was also a double optic neuritis, which improved with the other condition.

**Peculiar Course of a Recurrent Melanotic Sarcoma.** (Evolution particulière d'une recidive de melano-sarcome. *Zilgien, Gaz. hebdomadaire*, 1891, p. 32.)

The following case is worthy of record as illustrating the occasional vagaries observed in the clinical history of malignant growths. The microscopic examinations appear to have been careful, but the description of the structure of the tumor resembles more closely that of a carcinoma (or at least a cylindroma) than that of an ordinary sarcoma.

A woman, fifty-eight years of age, had a melanotic tumor of the cheek, developing from an angioma of long standing, and an infected gland in the neck, near the angle of the jaw, and both were removed by excision in December, 1886. In one month the wounds had healed, but a black nodule, the size of a pin's head, had appeared in the scar in the cheek, and five months later it had grown to the size of a pea, while another similar nodule had appeared under the skin near by, and numerous, rather painful, enlarged glands appeared in the submaxillary region, but the general condition remained good. Four years after the operation the patient was found to have a perfectly healthy scar, but the enlarged glands remained, although painless. She stated that the black nodules remained three or four months, and then disappeared spontaneously, and her general health was excellent. About that time she lost her husband, and the glands then began to enlarge slowly until March, 1891, when they became painful, and her health failed. The glands were then the size of a fist, and in July they had grown to the size of a foetal head; the skin was breaking down over them, with a discharge of blood. Unfortunately, the patient was then lost sight of. There seems to be no room to doubt that there was here a disappearance of melanotic nodules, even although there is no similar case on record.

**Mammary Tuberculosis.** (Die Tuberkulose der Brustdrüse (G. Mandry, von Bruns' Klinik). *Einiger Fälle von Tuberkulose der Brustdrüse* (E. Bender, Czerny's Klinik). *Beiträge zur klin. Chirurgie*, viii. 179 and 205.)

Mandry studied seven cases of primary mammary tuberculosis occurring in v. Bruns' clinic, and Bender reports three cases from Czerny's clinic. In addition, Mandry collected about forty cases from the literature, of which, however, he studied only twenty-one which were reported with sufficient fulness for his purpose. Only one of the twenty-eight cases occurred in

the male. Nearly all of the cases belong to the period of activity of the breast, from thirty to sixty years of age, but there was no direct connection with lactation. The axillary glands were affected in about two-thirds of the cases, and in one-quarter they were healthy. The breast may be larger or smaller than normal, frequently contains fistulæ, and the nipple is retracted. The fistulæ and ulcers have the characteristic tuberculous appearances. The breast is unevenly indurated, with fluctuating points. A section shows tumors of various sizes, frequently containing broken-down cavities in the centre. But there is also a form of limited cold abscess which occurs in the breast without infiltration of the gland. Bacilli are not numerous. The disease begins insidiously and runs a course of months or years, usually being seen by the surgeon in the stage of fistulous discharge, when the diagnosis can readily be made. As a rule, total extirpation should be carried out, and the prognosis is not bad, provided the other organs are healthy, which is the case in about half of the patients.

Successful Implantation of the Thyroid Gland of the Cat in the Abdominal Wall, with Outbreak of Tetanus after its Subsequent Extirpation. (Ueber erfolgreiche Einheilung der Katzenschilddrüse in die Bauchdecke und Auftreten von Tetanie nach deren Exstirpation. *Wiener klinische Wochenschrift*, 1892, p. 81.)—Von Eiselsberg removed one-half of the thyroid gland from the neck of a cat and immediately implanted it between the peritoneum and the transversalis fascia, and secured primary union. One month later the other half of the gland was removed from the neck, and the animal remained healthy. Two months later the transplanted gland was removed from its new situation, where it was found to be of normal appearance, and on the next day typical tetanus developed and soon ended fatally. Similar experiments were performed upon three other animals, but with much shorter intervals between the successive operations (in two cases the second half was removed from the neck five and six days after the transplantation of the first), and in all with the same result. Cats were chosen because they invariably develop tetanus after complete extirpation of the thyroid, even when it is removed in two operations. Asepsis (no chemicals) and speedy transference of the gland to its new site are the all-important requirements for success in transplantation. Von Eiselsberg then enumerates the attempts of others to avoid the effects of thyroidectomy in man and animals, by injection of triturated thyroid into the tissues or the vessels, or implantation of the thyroid of man or animals, and the similar attempts in the treatment of myxœdema. Perhaps his methods will give better results than have as yet been obtained.

The Function of the Thyroid Gland. (*British Medical Journal*, 1892, i. 217, 265.) By Horsley.

Thyroidectomy does not cause cachexia in birds and rodents, but in all other animals symptoms are produced, most quickly in the carnivora, least



so in the ruminants and solipeds, man and the monkey being between these extremes. The symptoms of loss of the thyroid are to be classified as neurotic (tetanus, tremor, paralysis, anæsthesia), myxœdematous, and cretinic. They are not due to injury of the nerves of the neck in the operation, but to loss of the gland, which must be a secreting structure, influencing the metabolism of the blood and the nutrition of the tissues, especially those of the nervous system.

**The Function of the Thyroid Gland.** (Ueber die Function der Schilddrüse. *Deutsche med. Wochenschr.*, 1892, 184.)

Canizzaro found that in dogs he could overcome the symptoms of tetanus caused by total thyroidectomy by large doses of potassium bromide, and kept fifty such animals for two years, and two others for six years, after the operation. He has since been able to obtain the same results with hypodermatic injections of a concentrated solution of the substance of the thyroid gland. Finally, he has found that a solution of the gray matter of the brain of healthy dogs had the same effect, but not if the dogs had previously been subjected to thyroidectomy. He has even succeeded in causing cessation of the convulsions of epileptics by injecting a solution of thyroid gland substance. He considers that the thyroid secretes a substance necessary for the nutrition of the nervous system.

**Operative Treatment of Exophthalmic Goitre.** (Die chirurgische Behandlung des Morbus Basedowii. Dreesmann. *Deutsche med. Wochenschr.*, 1892, p. 90.) (Weitere Beiträge zur Frage der Strumaexstirpation bei Morbus Basedowii. Stierlin. *Beiträge zur klin. Chirurgie*, 1892, viii. 578.)

Dreesmann reports three cases cured by ligature of the thyroid arteries (by Kocher and Trendelenburg), all having had typical symptoms; goitre, exophthalmus, tachycardia, tremor, etc. He also gives short accounts of some sixteen or seventeen cases of other operations for the same condition, most of them with good results.

Stierlin reports three cases (from Krönlein's clinic) of thyroidectomy for similar conditions, but the diagnosis is not quite positive in one. He finds twenty-nine cases of thyroidectomy for Basedow's disease on record, with one death and twenty-two cures. He admits the liability of mistakes in diagnosis, especially as the symptoms were so little advanced in some cases; and also (with Wölfler) the fact that any thyroid tumor may cause tachycardia and palpitation by its pressure upon the sympathetic, thus simulating the severer disease, and of course being cured by removal of the tumor. He notes, in particular, that large doses of the iodine preparations may cause similar nervous symptoms. Nevertheless, he thinks that operative treatment of this obstinate affection promises as much as any other at present. The permanence of the results should tell against the supposition that the operation has merely a psychical effect,—on the theory that the disease is a pure hysterical neurosis.

## GENITO-URINARY SURGERY.

IN CHARGE OF WILLIAM K. OTIS, M.D.,  
New York.

The Surgical Management of Genito-Urinary Calculus. (*Annals of Surgery*, March, 1892.) By J. D. Bryant, M.D., L. A. Stimson, M.D., E. L. Keyes, M.D., and L. B. Bangs, M.D.

Dr. Bryant, in considering the question of stone in the kidney, its diagnosis and the indications for surgical treatment, divides the symptoms of this disorder into two,—viz., “suggestive” and “convincing.” He defines a suggestive symptom of stone in the kidney as a symptom the presence of which leads the physician to *suggest* the possible existence of stone; a “convincing” symptom of the same condition causing him to assert its probable existence and to advise some surgical procedure to establish its actual presence.

Operative explorative treatment should be advised when the group of suggestive symptoms are persistent and annoying and are not mitigated by simpler methods of treatment. Operative surgical treatment should be urged promptly when the group of “convincing” symptoms indicates pathological kidney changes of an irreparable nature, especially if the use of simpler means of cure be attended by no improvement.

In dealing with the surgical treatment of stone in the kidney Dr. Lewis A. Stimson considers that the presence of a stone in the kidney calls for either a nephrotomy or a nephrectomy, according to the degree of disorganization of the kidney discovered at the time of the operation. The posterior route is the one to be preferred, and the operation will be wholly extraperitoneal, except in certain cases. The incision may be longitudinal, along the outer border of the sacro-lumbalis mass, about two and a half to three inches from the median line, and should extend through the skin from the level of the eleventh rib to that of the border of the ilium. In nephrectomy, when the kidney is much enlarged, the transverse incision has especial advantages; it is begun just within the outer margin of the sacro-lumbalis, a little below the twelfth rib, and carried outward parallel to the rib for about four inches. When the exceptional indication for resort to this incision arises from the great size of the kidney or from its close inflammatory attachment to the peritoneum, this incision permits an easy and free opening into the peritoneal cavity, through which the hand can be introduced to draw the kidney outward and to facilitate the securing of the pedicle and other later steps of the operation. Recent experience has shown that when the kidney is reached an incision through the substance of the organ into the pelvis has some advantages, and does not expose to the troublesome hemorrhage which may occur when the incision is made through the posterior wall of the pelvis.

Dr. Edward L. Keyes, in considering what special indications should



govern a choice of operation as between lithotomy and lithotripsy, thinks that old conclusions must now be modified by the light thrown from the three brilliant modern foci.

1. The admirable results of litholapaxy as applied to male children.
2. The undoubted triumphs of cystoscopy in perfecting diagnosis, more particularly as to the physical conditions of the urinary tract.
3. The accumulating confidence of those who are testing the value of suprapubic prostatectomy, as a radical measure for the relief of the enlarged prostate.

The size of the stone, at the present day, is by no means a prime factor in deciding the method by which its removal should be undertaken: the operation of litholapaxy is one requiring more skill on the part of the operator than is lithotomy, but even in skilled hands the question ought to be not does the stone justify crushing, but does the physical condition of the patient and of his urinary tract justify lithotripsy?

In children litholapaxy should always be the operation unless the stone is too large for such crushing instruments as will pass the urethra, when suprapubic cystotomy should be performed. In middle life (from adolescence to fifty), if a foreign body constitutes the nucleus of the stone, the perineal route may be properly preferred, but aside from such adventitious nuclei, unless the stone be very large (when the high operation is suitable), it should be crushed and washed out, unless such physical contra-indications as tight, deep urethral stricture, intense, long-standing cystitis with altered mucous membrane, sacculated stone or concomitant vesical tumor, etc., are present.

In old men with enlargement of the prostate we have (1) prostatic cases that have not used a catheter at all, or have not become habituated to the instrument; (2) most of the pallid, flabby, fat subjects, who show early the corneal arcus; and especially (3) those who exhibit a tendency to recurring localized eczema (notably of the extremities) and to flatulent dyspepsia.

These cases, if properly prepared, do very well under lithotomy, and in them the suprapubic method should be adopted, because it allows the surgeon to deal at a single sitting not only with the minor necessity,—the small stone,—but also with the more important and permanent disability,—the enlarged prostate, by prolonging the suprapubic lithotomy into a prostatectomy,—and making the patient's necessity become the surgeon's opportunity.

Dr. L. Bolton Bangs, on the Choice of Operation for the Removal of Stone from the Bladder, practically recognizes but two methods of operation, litholapaxy and suprapubic lithotomy. When prostatic hypertrophy is absent and there is no history of prolonged catarrhal inflammation of the bladder, no evidence of serious disease of the kidney, and the general condition of the patient is good, litholapaxy should certainly be chosen. Or even where a certain amount of prostatic hypertrophy exists, with only moderate evidences of disease of the kidneys, and the patient is vigorous

and in good general condition, litholapaxy should be the choice even in elderly persons. On the other hand, in younger men with healthy kidneys, but where evidence of a marked catarrhal condition of the bladder, associated with convulsive muscular contraction, makes it strongly evident that, besides the removal of the stone, physiological rest must be secured for the viscus, suprapubic cystotomy is indicated.

When the kidneys are in a state of considerable degeneration, lithotomy should be chosen as being the more speedy. Lastly, in choosing between the two operations, the skill of the operator should be taken into consideration, the prolonged crushing operation of litholapaxy being much more difficult than suprapubic lithotomy, the technique of which is very simple, and, in these days of widespread knowledge of antiseptics, it is comparatively a safe surgical procedure.

Does Gonorrhœal Vaginitis exist in Adult Women? (Gibt es eine Vaginitis Gonorrhœica bei erwachsenen Frauen? *Archiv für Dermatologie und Syphilis*, xxiv. Jahrg. 1892, Erstes Heft.) By Edward Weland, Stockholm.

As the gonococcus of Neisser rarely occurs in purulent secretions from the vagina, it has been claimed that a true gonorrhœal vaginitis never exists, but that when the specific organisms are found in the vagina they are simply migratory specimens from the uterine cervix or possibly the urethra.

Weland, however, has discovered that, while gonorrhœal vaginitis rarely exists, it does so occasionally when the disease has been contracted during the first coitus, when the vaginal epithelium has undergone no change, and not so rarely among children as might be supposed. He has observed cases in which neither the cervix nor the urethra was affected, where nevertheless the vaginal secretions contained true gonococci.

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## ORTHOPÆDICS.

IN CHARGE OF REGINALD H. SAYRE, M.D.,

Assistant to the Chair of Orthopædic Surgery, Bellevue Hospital Medical College, New York.

Results in the Treatment of Hip-Joint Disease by the Portable Traction Hip-Splint without Immobilization except during the Inflammatory Stage of the Disease. (*New York Medical Journal*, April 30, 1892.) By Lewis A. Sayre, M.D.

The author holds that it is not essential in all cases of hip-joint disease to immobilize the joint during the entire period of the disease, as has been claimed by various recent writers, and to prove his assertion cites in full the histories of seven cases, all of which had been seen by surgeons of recognized ability, who had confirmed the diagnosis of hip-joint disease. In several the family history was tubercular, and yet six of these cases had recovered with absolutely perfect motion, as shown by photographs and ex-



hibition of patients, while the remaining case had excellent motion, being able to go up and down stairs without limping, and could cross his legs, but was unable to put his feet in his lap while the leg on the affected side was parallel to the floor, as the others were able to do.

In four hundred and seven cases treated between 1859 and 1889, of which the author had accurate notes, there were, when first seen :

In first stage .....	118
In second stage .....	119
In third stage .....	82
Not mentioned .....	88
	<u>407</u>

## RESULTS.

Cured with perfect motion .....	71
“ “ good “ .....	142
“ “ limited “ .....	83
“ ankylosed .....	5
Result unknown .....	78
Under treatment .....	14
Abandoned treatment.....	3
Discharged from treatment.....	2
Died of exhaustion .....	2
“ “ phthisis .....	1
“ “ pneumonia.....	1
“ “ tubercular meningitis .....	5
	<u>407</u>

In two hundred and eighty cases in which the result and kind of splint used were known, the results were :

		Per cent.
Cured with perfect motion, long splint,.....	19 .....	21.59
“ “ “ “ short “ .....	54 .....	28.12
“ “ good “ long “ .....	34 .....	38.63
“ “ “ “ short “ .....	86 .....	44.79
“ “ limited “ long “ .....	29 .....	32.95
“ “ “ “ short “ .....	49 .....	25.52
“ ankylosed, long splint.....	3 .....	3.40
“ “ short “ .....	1 .....	0.52
Died, long splint.....	3 .....	3.40
“ short “ .....	2 .....	1.04
	<u>280</u>	

88 cases used long splint.

192 “ “ short “

The principles of treatment employed in these cases were rest in bed, with the sound side fastened to a board extending from axilla to sole of foot, with the lame leg elevated, while traction was applied in *the line of the deformity*, the leg being gradually lowered as the deformity lessened, until the legs were parallel and flat in the bed without tilting the pelvis. In early cases a blister was applied behind the trochanter major. The deformity

having been overcome, the patients were allowed to walk, wearing the short splint and crutches, or the long splint, either with or without crutches, as the case might require. Cases with disease of both hips were treated, as far as possible, in the wire cuirass, to permit being carried into the sun and fresh air,—the limbs being removed one at a time at intervals, and slightly moved while traction was made. The author has seen a case which was kept constantly in the wire cuirass without movement over nine months, resulting in ankylosis of all the joints of the trunk and lower extremities, though there had been no pain or fever to make the supposition tenable that the ankylosis was due to rheumatism. Traction in the line of the deformity, accompanied sometimes by traction at right angles to the thigh, as first used in 1868 by the author, was regarded as a necessity,—one case having been seen where complete destruction of head of femur and perforation of acetabulum had taken place from reflex muscular spasm, although the child had been immobilized in plaster of Paris for two years without traction.

Cases of exsection were not included in the table, as they had been already published, and the majority had been in such a condition when first seen as to make instrumental treatment out of the question.

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## OBSTETRICS AND GYNÆCOLOGY.

IN CHARGE OF J. M. KEATING, M.D.,

Colorado Springs, Colorado; Fellow of College of Physicians of Philadelphia; Formerly Consulting Physician for the Diseases of Women, St. Agnes's Hospital, Philadelphia; Consulting Surgeon to the Maternity Hospital; Gynæcologist to St. Joseph's Hospital; Visiting Obstetrician to the Philadelphia Hospital (Blockley), and Lecturer on the Diseases of Women and Children; Editor "Cyclopædia of the Diseases of Children," etc.

Deficiency in the Excretion of Urea an Indication of Malnutrition and not Pathognomonic of Malignant Disease, nor a Contra-indication for Operative Treatment. (*Annales de Gynécologie*, etc.) By Drs. H. Hartman and C. Gundeloch.

These studies were undertaken to ascertain the correctness of the assertion of M. Rauzier, of Montpellier, that hypoazoturia is of great diagnostic importance, and, when associated with an abdominal tumor without tuberculosis or ascites, constitutes a positive contra-indication for surgical interference.

It was taken for granted that thirty-three grammes (or five hundred and twelve grains) of urea are passed in the twenty-four hours by a healthy man, but that this estimate was too high for the patients under consideration, and that an average must be adopted.

The first question, as to the association of hypoazoturia with malignant growths, from a diagnostic point of view, is negatively settled by the study of seven cases of carcinoma in the last stages of the disease, the amount of urea in each case being about (in grammes) six, seven, ten, six, eleven, ?,



six. But in nine cases of carcinoma in an early stage, in which nutrition was not affected to any marked extent, the amount of urea excreted daily was (in grammes) as follows: fourteen, sixteen, seventeen, eighteen, twenty, twenty-one, twenty-four, twenty-four, twenty-six.

The deduction from these and other investigations is that the deficiency of urea is in direct proportion to the degree of malnutrition.

The fact that no value is to be attached to hypoazoturia as pathognomonic of cancer is established by a study of nine cases of non-malignant disease in which it was present,—cases of metritis, salpingitis, chronic leg ulcers, and fibroid tumors of the uterus.

The question arises, Is deficiency in urea excretion a contra-indication for laparotomy? In the absence of malignant disease is it indicative of renal lesions that will bring about uræmia after operation?

Twelve cases, including ovariectomies, salpingectomies, etc., are recorded. The authors state that, contrary to the views of M. Rauzier, the patients in whom the most marked hypoazoturia existed, one of whom excreted but ten grammes and another seven grammes in twenty-four hours, recovered without accident, but the gravity of the operation was noted in the fact that, of four who died, the amounts excreted were low, as fourteen, seventeen, eighteen, and twenty grammes.

The paper is of great interest in demonstrating the importance of studying the solids of the urine in every case presented to us. Too much stress has been laid upon the significance of albuminuria. Fortunately, the pendulum is swinging backward, and albuminuria is being understood and relegated to its proper place in diagnosis and prognosis.

**Carcinoma of the Cervix Uteri in the Negress.** (*Johns Hopkins Hospital Reports*, vol. ii. p. 224.) By J. Whitridge Williams, M.D.

This interesting case is probably the first one of its kind reported. The patient was a dark swarthy-skinned, *full-blooded* negress, thirty-eight years old, married for sixteen years. Had eleven children, youngest nine months old; never miscarried; all labors normal, and nursed all her children.

Three months after birth of last child she first noticed metrorrhagia; had constant daily flow and pain in abdomen and back. Extensive infiltration was found, involving the uterus, broad ligament, etc. The most that could be done in the way of treatment was by curetting. A microscopic examination of the scrapings confirmed the diagnosis.

A second case was seen in the dispensary of the hospital in a "brown negress," aged forty-eight.

**Conservative Surgery applied to the Ovary.** (*Medical Record*, December 19, 1891.) By T. Gaillard Thomas, M.D.

It is a pleasure to read the history of a case of this kind, and it is to be sincerely hoped that Dr. Thomas's example will be more generally followed. The patient had been three years married, was a nullipara, but ardently

desiring to have children. The uterus was anteflexed, and the cervical mucous membrane granular from prolonged contact with ichorous discharge.

The left ovary was found as large as a small hen's egg, prolapsed and tender. The right ovary was as large as a small orange, prolapsed, and firmly fixed by adhesions.

The broad ligament was split, and the cyst was shelled out without evacuating its contents. Two cysts, the size of cherry-stones, in the ovary were opened and gently cauterized. The tube, which in the mean time had been broken away from the ovary, was attached to it and firmly secured. She made a rapid recovery, her chances for maternity were greatly increased, and the next regular menstrual period was normal.

**Inclined Decubitus an Important Aid in the Treatment of the Diseases of Women.** (*New York Journal of Gynæcology and Obstetrics*, February, 1892.) By Thomas A. Emmet, M.D.

Dr. Emmet calls attention to the necessary tortuosity of the pelvic veins (which are valveless) to maintain the equilibrium between the arterial and venous flows, and dwells upon the value of a more or less prolonged rest in bed, with the foot of the bed elevated by blocks about eighteen inches. The relief thus obtained for pelvic distress in most cases of uterine disorder of varied kinds is marked, especially in diseases where the veins are most congested, from increased blood-supply to the parts. The posture of the patient will serve the same purposes as a well-placed pessary, and maintain the proper position of the uterus. Postural treatment will result in rapid involution of uterus and vagina, it will cure tubal disease, and will prevent recurrent attacks of peritonitis from this cause. The rest treatment should continue till a positive result is obtained.

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## OPHTHALMOLOGY AND OTOTOLOGY.

IN CHARGE OF J. E. HARPER, A.M., M.D.,  
Chicago, Illinois.

**Aspergillus Otorrhœa and Chronic Deafness.**—Dr. Jas. L. Minor (*New Orleans Medical and Surgical Journal*, December, 1891) reports a case of disease of the external ear from vegetable fungus (*aspergillus*),—cure; chronic inflammation of middle-ear, with persistent discharge (*otorrhœa*),—cure; deafness of eighteen years' duration, relieved by artificial drum-membrane. This patient, a man of fifty-five, had never heard well. Earaches began in 1849, and were followed by a discharge from each ear, which continued until 1870. Temporary improvement followed, lasting ten years. When seen deafness in right ear was absolute. With left ear only the loudest sounds could be heard. Right tympanic membrane was retracted, thickened, and scarred. The left membrane was perforated near



its centre, and pus escaped from the suppurating middle ear. The auditory canal was inflamed and covered with a dark membranous material, which under the microscope was found to contain *aspergillus flavescens*.

Treatment consisted in cleansing with a one to five-thousand solution of bichloride and, after drying with absorbent cotton, tamponing with boracic-acid powder. When the inflammatory symptoms subsided, an artificial membrane was improvised of absorbent cotton moistened with glycerin and water. On introducing this the patient was able to hear and understand when addressed in an ordinary tone of voice. The artificial membrane had to be renewed about once a month.

**Removal of Foreign Bodies from the Ear.**—Dr. Olivenbaum (*Norsk. Mag. for Lægevidenskaben*) reports the removal of foreign bodies from the ear by the following method: Powdered alum is heated over a lamp; a wood splinter is dipped into the alum, quickly introduced into the meatus, placed on the foreign body, and allowed to remain till adherent, when on withdrawing it the foreign body is brought away.

**Cholesteatoma.**—Dr. Harry Friedenwald at the Clinical Society of Maryland read a paper on cholesteatoma or pearl tumor of the ear. He describes three cases, one in which the tumor was quite small with a perforation of Shrapnell's membrane; the second, larger, in which the outer bony wall of the middle ear was completely destroyed; and a third, which occupied the greater portion of the mastoid cells, perforating externally, and internally into the cranial fossæ.

**Seat of Centre for Word-Hearing.**—Dr. Charles K. Mills (*University Medical Magazine*) locates the centre for word-hearing in the hinder two-thirds of the first and second temporal convolutions; its exact position is in a line with or just in front of the posterior extremity of the horizontal branch of the fissure of Sylvius. Possibly it is restricted to the second convolution. Almost complete word-deafness will follow a lesion confined to the posterior thirds of the first and second convolution of the left hemisphere. The field for auditory memories covers the posterior two-thirds of the first and second temporal convolutions. The auditory field and special auditory centres have their highest development in the left hemisphere.

**A New Method of introducing the Eustachian Catheter.**—Dr. J. M. Ball (*Journal of the American Medical Association*, December 19, 1891) describes his method of introducing the Eustachian catheter. After cleansing and cocainizing the nasal mucous membrane, he retracts the soft palate with a White's retractor, has the patient hold down his tongue with a tongue depressor while he passes the catheter through the nose, then by introducing a mirror into the pharynx he is able to see that the catheter enters the orifice of the Eustachian tube. After the introduction of the catheter, the mirror is withdrawn, and the inflation is completed in the usual way.

A Case of Hæmatoma Auris without Mental Disease. (*Medical Record*.) By L. W. Starling, M.D.—A seaman in the United States navy, thirty-one years of age, reported for treatment for his right ear, pain in which had begun two hours before and had grown quite severe. Examination showed the external ear swollen into a red, hot, fluctuating tumor about the size of a hen's egg, closing the canal entirely. A small incision was made at the concavity of the concha, evacuating about ten cubic centimetres of bright arterial blood. A dose of sulphate of magnesia was given, and, as the tumor had not decreased in size the next morning, it was again punctured, but, as it rapidly refilled, no further treatment was given, and he was discharged in about two weeks, as he then experienced no pain.

Upon examination of the ear some four months afterwards, the tumor had gradually contracted, the fluctuation gone, but the ear was very much thickened and puckered out of shape. There was a considerable amount of new connective-tissue formation. The left ear was found to have been affected in like manner some years before, rendering it deformed like the right, but hearing was normal in both. The reason for this affection was somewhat doubtful, as the family history was good, his mother and father were still living and in good health, he never had had syphilis or rheumatism himself, nor was he addicted to liquor. Had had a mild attack of typhoid fever, but this was after the first appearance of a tumor in left ear. Never had the scurvy, nor anything tending to induce hemorrhagic diathesis, and showed no symptoms of mental trouble of any kind.

Relations of Micro-Organisms to Cataract.—Referring to the statement of Galippe that micro-organisms are usually present in cataracts, Dubief (*Annales d'Oculistique*, September, 1891) publishes the records of several investigations which he has recently applied to the solution of this question. The lens having been removed with the utmost care and antiseptic precaution, it was in each case washed in several changes of sterilized water in guarded sterilized tubes, and then placed in a tube of sterilized bouillon and broken into bits with a glass rod. These portions were employed to inoculate a series of tubes of nutrient materials; and, besides, the water in which the lens had been washed served to inoculate another series of tubes in each case. The writer states that in almost every instance those tubes which had been inoculated with the cleansed lens-particles remained sterile; those, however, inoculated with the wash-water were found growing a variable number of colonies, those inoculated with the first water used containing the greatest number of colonies. These results confirm the views expressed by a number of writers upon the subject, that whatever bacteria are to be found in such investigations are probably the result of contamination from the conjunctiva or from the external air.

Plain London Smoked Glasses.—Dr. W. L. Bullard (*Virginia Medical Monthly*) says that he has found that patients with diseased eyes



secure more comfort from London smoked glasses than from the ordinary blue ones. He advocates the use of the plain glass rather than the concave or coquilles commonly used, as the latter have usually a minus refraction and are full of bubbles and other imperfections.

**Ophthalmoplegia Externa.**—Drs. J. C. Shaw and C. F. Barber (*Brooklyn Medical Journal*) report a case of ophthalmoplegia externa in a child two and a half years old. When first seen there was ptosis of both eyes, more decided in left, and paralysis of internal rectus of left eye. Pupils were normal. Urine contained sugar. Later the pupils became dilated and did not react. The right internal rectus became involved, headache appeared, and the right eye protruded. *Quasi petit mal* appeared, stupor supervened, and death occurred. No autopsy was permitted.

Diagnosis, tumor in the quadrigeminal region.

**Meibomian Calculi.**—Dr. A. W. Burrows (*Western Medical Reporter*, January, 1892) reports the removal of eighteen Meibomian calculi from a patient forty-five years of age. They were arranged in symmetrical rows along the palpebræ of both upper and lower lids, and looked like “sago granulations.” Failing to remove them satisfactorily with scoop and forceps, as they had moulded themselves accurately to the glands, the doctor resorted to the destruction of the surrounding tissue with nitrate of silver under cocaine. Under the microscope they have the appearance of quartz.

**Cicatricial Contraction of the Eyelids treated by Skin-Grafting.**—Dr. J. H. Woodward (*New York Med. Journ.*, February 13, 1892) reports two cases of cicatricial deformity of the eyelids relieved by skin-grafting.

The first was a case of lagophthalmos. After disinfecting the parts carefully, the cicatrix was dissected up, the upper and lower lids united by a single suture, the oozing was checked, and a graft of suitable size taken from the previously disinfected shoulder and fitted to the wound. The result was complete restoration of the lid.

The second case, cicatricial entropion, was more difficult, as the deformity was irregular and the conjunctiva inflamed and thickened by the prolonged exposure. Two grafts were taken, as it was difficult to get one fitted to the wound. Only one graft adhered, and numerous small ones were transplanted from the forearm to the bed of the dead graft. In a week the wound had healed, and it was difficult to distinguish the grafts from the normal integument. The dressings in both cases were of sterilized gauze, moistened every two hours with a one per cent. sterilized solution of common salt.

**Unilateral Blindness from Injury to the Skull.**—Dr. P. A. Callan, at the meeting of the Medical Society of the State of New York (*New York Med. Journ.*, February 29, 1892), reported four cases of injury to the skull

followed immediately by uniocular blindness, and deduced the principle that in these and similar cases blindness resulted from the compression of the optic nerve at the optic foramen.

**Advancement of the Rectus Muscles.**—Dr. L. Howe (*ibid.*) read a paper on the method of advancing the internal rectus for divergent squint. After describing the various methods and pointing out their defects, he exhibited a pair of forceps he had devised for seizing the muscle after it and its antagonist had been divided. Controlling this muscle and preventing its retraction obviates one of the greatest annoyances connected with the operation. He described a new method of introducing the sutures so that they would not slip, thus preventing the puckering of the muscle under the conjunctiva. His plan would prevent over-correction and is an improvement on Prince's operation.

**Tuberculosis of the Iris, Suspensory Ligament, and Retina.**—At the meeting of the Ophthalmological Society (*Lancet*, February 6, 1892), Mr. R. L. Knoggs reported a case under the foregoing title. The patient, a boy of nine months, had iritis of a quiet type, associated with from fourteen to twenty white nodules on the iris. Those on the lower part of the iris grew rapidly and coalesced, forming a yellow mass, which produced a large growth at the sclero-corneal margin. Excision was done, but the child died seven weeks later from tubercular meningitis.

A section of the eye showed that it had been transformed into a tuberculous mass containing many distinct miliary granules. The outer tunic was thinned and bulged. The growth had penetrated the uveal tract just in front of the ciliary body and passed through the suspensory ligament. Petit's canal was filled with inflammatory exudation and contained tubercles in which giant cells were found. The cell-spaces in the lens were filled with inflammatory exudation, and in the retina an inflammatory focus was formed situated between the nerve-fibre layer and the pigment.

**Rat-Tail Sutures.**—Dr. A. M. Belt (*Medical News*) says that for some years he has been using rat-tail sutures in eye surgery. They are finer than any other animal sutures; sufficiently strong, easily kept aseptic, and, as they become pleasantly soft when moistened, are unirritating and never have to be removed.

**Influence of Tuberculin on a Certain Type of Corneal Ulceration.**—Dr. H. Gradle (*Medical Recorder*, February, 1892) reports the use of hypodermic injections of small quantities of tuberculin in those cases of corneal ulceration beginning as a minute spot of white infiltration in the substance of the cornea, accompanied by moderate ciliary irritation and injection. In a few days the epithelium breaks down and a shallow excavation results. The ulcer is funnel-shaped, with sharply-cut edges and



infiltrated floor. It usually leads to perforation, but does not extend laterally. The cases treated by Dr. Gradle were children with enlarged cervical glands. Hitherto the actual cautery thoroughly applied has been the only successful method of treatment.

**The Position of the Nose and its Importance in the Adjustment of Glasses.**—Dr. A. C. Simonton (*Journal of the American Medical Association*, January 16, 1892) states that he has made a large number of measurements, and finds that one pupil is from one-sixteenth to one-eighth of an inch farther from the nose than the other. He believes the inability of some patients to wear lenses which correct their defects of vision to be due to the decentring of the glasses, resulting from this lack of symmetry. He suggests that lenses be ground with reference to the centre of the eye rather than to that of the spectacle-frame.

**Iodine Injections into the Vitreous for Detached Retina.**—Dr. Charles Stedman Bull (*Medical Record*, January 16, 1892) reports five cases of detachment of the retina treated after the method of Scholer by injecting tincture of iodine into the vitreous. In two cases acute panophthalmitis resulted; in two others the reaction was of moderate intensity, yielding readily to treatment. In the remaining case the reaction was slight. The results of the treatment were unsatisfactory, none of the patients being improved.

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## DISEASES OF THE LARYNX, NOSE, AND SURROUNDING STRUCTURES.

IN CHARGE OF J. PAYSON CLARK, M.D.,

Physician to the Throat Department of the Boston Dispensary; Assistant Physician for Diseases of the Throat, Massachusetts General Hospital.

**Tonsillotomy and its Therapeutic Efficacy.**—Dr. J. M. W. Kitchen (*Medical Record*, January 16, 1892) has for several years resorted to this operation to abort attacks of quinsy, and so far always with success. The practice is contrary to what is taught,—i.e., to wait until the inflammation has subsided before operating. The writer operates at the beginning of the attack, before the fauces and neighboring parts have become too swollen. This procedure aborts the attack and prevents others in the future.

**A Case of so-called Laryngeal Vertigo.**—Dr. I. Adler (*New York Medical Journal*, January 30, 1892) reports at some length a case of this rare and obscure affection. The patient, a man, fifty-three years of age, after a moderate attack of bronchitis, became subject to a spasmodic cough, attended by frequent seizures of loss of consciousness. After all other treatment

had failed, clipping the elongated uvula caused prompt relief. The irritation of the elongated uvula had probably frequently brought about spasms of the glottis. A predisposing cause may have been great irritability of the nervous system, following an attack of influenza. The loss of consciousness seems capable of being accounted for by Weber's theory. Forced expiratory movements with spasmodically closed glottis caused increased thoracic pressure, compressing ultimately, to a certain extent, the heart, but principally the venæ cavæ. The flow of blood to the heart was diminished, and finally stopped, causing arterial ischæmia and venous hyperæmia of the brain, the heart's action coming to a stand-still, unless, before the climax is reached, the glottis is reopened and normal respiration resumed.

A Contribution to the Operative Treatment of Laryngeal Tuberculosis.—Carl Stoerk (*Wien. medicin. Wochenschr.*, January 16 and 23, 1892), speaking of the various methods of treatment in vogue for this disease, says that, although insufflations of iodoform or iodol do cause, in time, a change in a tuberculous ulcer, a previously deep ulcer showing granulation formation, unfortunately these granulations remain, requiring resort to knife or curette to get rid of them, and the gain of the patient is questionable. Lactic acid, also, after several years' use, has lost nearly all its reputation. In one of his cases the epiglottis was richly covered with granulations. They were treated at different times by lactic, nitric, or chromic acids, with little effect. (The sputum was found to contain bacilli.) The lumen of the larynx was almost closed, the upper and lower surfaces of the epiglottis being also covered with knobby growths. After making preparations for tracheotomy, eight pieces of the growth were removed from within the larynx with spoon-shaped cutting forceps, made especially for the purpose. The danger of suffocation was thus removed, and later some smaller pieces were removed with the idea of restoring the voice, which was finally accomplished at the end of a year. As it was difficult to remove granulations from the epiglottis without tearing it, the idea occurred to the writer to inject under the mucous membrane of the epiglottis a solution (seven parts in one thousand) of corrosive sublimate. This caused so great an œdema as nearly to suffocate the patient, but the effect on the granulations was very satisfactory, the epiglottis being left smooth and pliable. This procedure could not be repeated on other parts of the larynx, from the danger of suffocation.

Etiology of Scleroma of the Throat, Larynx, Trachea, and Nose.—Dr. Rich. Paltauf (*Wien. klin. Wochenschr.*, December 31, 1891) says that in a doubtful case the failure to find the characteristic bacilli would exclude the diagnosis of rhino-scleroma. The cell-degeneration in this disease is connected with the scleroma bacilli, and is caused by them. The results of his investigations are summed up as follows :



1. The so-called primary laryngeal and tracheal stenoses are identical diseases with scleroma of the nose. Scleroma may be primary in the nose, generally the posterior part, but also in the larynx and trachea.

2. The presence of the rhino-scleroma bacilli is in doubtful cases of diagnostic value.

3. The bacteria of scleroma differ from the nearly-related Friedländer bacteria in their lesser virulence, their lesser power of causing fermentation in sugar solutions, their greater sensitiveness to acids, and finally by their behavior in milk and in old gelatin cultures.

**Drawing in of the Alæ of the Nose.** (*Deutsche med. Wochenschr.*, January 28, 1892.)—Dr. Moritz Schmidt considers the drawing in of the alæ nasi as one of the more frequent causes of mouth-breathing and its evil results. It may affect the whole ala or only the outer border of the inner nasal opening, the plica vestibuli. The cause is a laxity of the nasal walls and a deficient activity of the dilator and levator muscles. All processes which hinder nasal respiration and thus cause insufficient use of these muscles influence its appearance. This condition is always looked for by the author, and, if present, is treated by a small wire dilator which he has had made for the purpose. Swelling of the turbinated bodies has been cured by its means alone. The author has used it in more than one hundred cases. He also recommends its use in typhoid fever, pneumonia, and phthisis (especially laryngeal) when there is mouth-breathing.

**Massage of the Mucous Membrane and its Curative Results in Chronic Diseases of the Nose, Throat, Ear, and Larynx.**

Before resorting to this method of treatment, so enthusiastically advocated by Carl Laker (*Prager med. Wochenschr.*, February 3, 10, 17, 24, 1892), a thorough investigation of the topography of the nasal cavities or other part to be treated must be first made. The massage must then be carried on without the aid of sight, guided only by the sense of touch and the mental picture of the topography. The instrument preferred by the author is a sound of packfong, twenty-two centimetres long, diameter six to seven Charrière. The end of the sound is knobbed, and to it is fitted exactly the wad of cotton. The end is dipped into a ten-per-cent. solution of cocaine or smeared with pure vaseline or menthol vaseline,—it seems to be of little importance which remedy is used. The probe is grasped like a pen in the right hand, introduced into the nose, then, the forearm being flexed, the muscles of the arm contracted, regular vibrations of the forearm are set free and transmitted through the sound to the mucous membrane. The vibrations must be as regular as possible, an irregular vibration being very painful. This regularity can be acquired only by practice. Analysis has shown that the number of vibrations lie between six hundred and two thousand a minute, and can be made with such regularity that the difference in time between any two vibrations scarcely reaches one-one-hundredth

of a second. The vibrations in laryngeal massage lie between five hundred and six hundred a minute.

The sensation is unpleasant, sometimes painful, to the patient, the more so the more acute the condition. Treatment must not be too harsh at first, especially on the middle turbinated body and the upper part of the nose. On the other hand, superficial massage lengthens greatly the treatment. Hemorrhage during massage is frequent, but has never done any harm. The duration of each sitting is from several seconds to several minutes, according to the sensitiveness of the patient. The average length of treatment is from three to six weeks, sometimes much longer, although in such cases a steady improvement keeps the patient from becoming discouraged. It is too early to say how long cures will last, but the author knows many patients free from troublesome symptoms for a year after treatment was completed.

The treatment is applicable in most nasal affections, hypertrophic conditions being more amenable to treatment than atrophic; indeed in cases where the breathing-space is diminished this treatment finds its greatest triumph. In most cases five days elapse before there is any evident improvement. Pathological reflexes, as headache, cough, neuralgia, asthma, etc., disappear. Membranous adhesions between the septum and a turbinated body atrophy under this treatment. Some hypertrophies, however, have still to be treated by the snare. The author also claims that the site of polypi can often be changed into healthy tissue. Light grades of atrophic rhinitis improve wonderfully. In these cases the first nasal space must also be treated, and in more advanced cases the pharynx and larynx. In the frequent sore throats of children massage is valuable. The author speaks very favorably of its use in middle-ear troubles.

By its use in the larynx long-standing deficiencies of the muscles of the vocal cords disappear. Ulcerations of the larynx can be cured, and even tubercular ulcers have been healed.

The technique of laryngeal massage is more difficult than that of the naso-pharynx, and is unpleasant but not necessarily painful. The length of laryngeal massage is naturally very short, as respiration ceases during its progress.

In secondary chronic conjunctivitis nasal massage is valuable.

**Deviation of the Nasal Septum.** (*Revue de Laryngol., de Rhinol.*, etc., February 15, 1892.)—Deviations occur where the septum is normally thinnest. It is only in children before puberty that one can find a majority of straight septa. There are deviations or other irregularities of the septum in ninety per cent. of adults. The most general cause for these deviations, according to Mayo Collier, is the prolonged obstruction of one nostril, as often occurs in a coryza. The air in the obstructed nostril is rarefied at each inspiration, causing a proportionate pressure on the septum, which cannot fail in time to cause the septal wall to yield at its weakest point.



The writer also recognizes traumatism as a frequent cause, more, however, of ridges than of simple deviations.

**Respiratory Troubles in Tracheotomized Children with Adenoids.** (*Revue de Laryng., d' Otol., etc.*, February 1, 1892.)—Dr. Martha draws the following conclusions from two cases: When a tracheotomy-tube cannot be withdrawn without causing serious dyspnoea, not only the larynx and trachea but also the naso-pharynx should be examined, since the presence of adenoid vegetations can in such cases cause laryngeal spasm. A complete removal of these growths in the cases reported entirely obviated the difficulty.

**Intubation for Relief of Stenosis in Tubercular Laryngitis.** (*New York Med. Journ.*, February 27, 1892.)—Dr. F. E. Hopkins reports a case of this disease in which the glottis was so much occluded, especially by a large interarytenoid swelling, that some operation became necessary to relieve the dyspnoea. Intubation was performed with some difficulty, but with gratifying results. Later the tube was expelled by coughing, but the dyspnoea never returned.

This operation has been done only a very few times. Massei has performed it three times, Dillon Brown once, and Dr. C. Cox once, the last to promote euthanasia in a dying patient. All the familiar arguments for intubation as against tracheotomy apply with especial force to these cases.

**Erysipelas of the Pharynx and Larynx.** (*British Med. Journ.*, February 27, 1892.)—Four cases of this fortunately rare affection are reported by F. De Havilland Hall. In its rapid development and constitutional symptoms it appears identical with external erysipelas. When secondary it usually extends by continuity, although cases are reported where erysipelas of a remote part was accompanied by erysipelas of the larynx. The line of junction between skin and mucous membrane seems, generally, to offer an impediment to the spread of this affection. The prognosis is grave, on account of the local disturbances as well as on account of the general effects of the disease. The treatment consists of an ice-bag to the neck, pieces of ice to suck, and the administration of twenty drops of the tincture of the chloride of iron with twenty drops of glycerin every three or four hours, if the disease is confined to the pharynx. If the larynx is also implicated ten to twenty grains of bromide of potassium should be substituted for the iron and glycerin. If laryngeal stenosis increases swab the pharynx and larynx with a twenty-per-cent. solution of cocaine. If this gives no relief in a half-hour or an hour, free scarification should be resorted to. Energetic counter-irritation to the throat, chest, back, and shoulder-blades with sinapisms often gives relief. If suffocation threatens tracheotomy must be resorted to. The writer thinks intubation possible only in a very limited number of cases.

**Treatment of Diphtheria.** (*Zeitschrift f. Therapie*, March 1, 1892.)—E. Krein recommends the application to the neck twice daily of mercurial ointment, and over it some cotton smeared with simple ointment; also to swallow a coffeespoonful of equal parts water and lime-water every quarter of an hour. Salivation is not to be feared, because the inunction is continued only a few days. Ignatz Moskowitz recommends practically the same treatment.

**Diphtheria treated by the Early Local Use of Germicides.** (*Medical News*, March 5, 1892.)—Robert Reyburn uses a spray of a stronger solution of corrosive sublimate than usually employed,—viz., one part corrosive sublimate, five parts tartaric acid, five hundred parts distilled water. This solution is liberally sprayed hourly for the first twenty-four to forty-eight hours. Alternately with this a solution of twenty grains chloral hydrate to the ounce of glycerin is applied hourly with a brush. These applications become less frequent as the membrane softens. When it is gone the corrosive solution is made one to one thousand or even one to two thousand. The air of the room is kept saturated with moisture. Frequent doses of quinine later, alternated with the tincture of the chloride of iron in large doses, and continued for two or three days, form part of the treatment. Alcohol is given in small doses at regular intervals.

This paper is based on fifteen cases, all recoveries. In no case did the bichloride spray cause mercurial poisoning.

**Tracheotomy in Diphtheria.** (*Therapeutische Monatshefte*, January, 1892.)—A. Baginsky and T. Gluck report sixty-eight cases of tracheotomy in two hundred and forty-four cases of diphtheria in the Emperor and Empress Frederick Childrens' Hospital in Berlin. Twenty-three (33.8 per cent.) of these recovered. Causes of death were twenty-five times descending croup, nine times sepsis, seven times paralysis of throat, once collapse, four times pleuro-pneumonia, once complication of scarlet fever, twice wound diphtheria, ten times nephritis was essentially a factor. The autopsies showed broncho-pneumonia twenty-seven times, parenchymatous changes in the heart muscles generally, four times pleuro-pneumonia, once diphtheritic œsophagitis and gastritis. The epidemic was an especially severe one. Of fifteen cases of intubation H. Aronson writes that only two recovered (one only after secondary tracheotomy). Secondary tracheotomy was done eight times. Corrosive sublimate one to three thousand as a gargle, one to five hundred as a swab, and three-per-cent. alcoholic solution of carbolic acid are considered the best antiseptics.

**The Galvano-Cautery Treatment of Diphtheria.** (*Deutsche med. Zeitung*, January 4, 1892.)—Dr. F. Bloebaum says the galvano-cautery is the only sure and safe antiseptic. It must be used early when the disease is still limited to the tonsils, soft palate, or back wall of the pharynx, where the



cautery can reach it, and before too much of the poison has been absorbed into the system. In this way the author has cured thirty-nine out of forty cases of genuine diphtheria. In the fatal case the disease had already become too far advanced. The cure is usually very rapid. The fall of temperature frequently occurs in five or six hours; after twenty-four hours the patient is almost always free from fever. Complications are rare. After the operation the burn is powdered once or twice a day with dermatol powder. The diagnosis must be made as early as possible, so that the patches to be treated may be as small as possible. If microscopical examination to confirm the diagnosis is out of the question, it is better to have treated a follicular tonsillitis by the cautery than let a case of diphtheria go too far because the diagnosis is not sure.

**Etiology of Diphtheria.** (*Deutsche med. Wochenschr.*, February 11, 1892.)—A. Baginsky has examined one hundred and fifty-four cases of diphtheria with regard to the presence or absence of the Löffler bacillus. Bacilli were found in one hundred and eighteen, of whom forty-five (thirty-eight per cent.) died. Among these one hundred and eighteen cases were thirty-nine more or less severe paralyses, seventeen with septic symptoms, forty-four required tracheotomy, and only twenty-nine had no complications. Of the thirty-six cases diagnosticated diphtheria in which no bacilli were found, only four died, one not being seen until the disease had almost disappeared and there were paralytic symptoms, another being complicated with measles, and the other two dying with double empyema, a very unusual termination of genuine diphtheria.

Thus, there are two forms of disease with membrane formation in the pharynx, one in which the bacillus of diphtheria is present, the other where it is absent, the latter being relatively harmless and not so contagious as the former. The pharyngeal membrane sometimes seen in scarlet fever belongs to the latter class.

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## DERMATOLOGY.

IN CHARGE OF WILLIAM A. HARDAWAY, A.M., M.D.,  
Professor of Diseases of the Skin in the Missouri Medical College, St. Louis.

**Xeroderma Pigmentosum.** (*Journal of Cutaneous and Genito-Urinary Diseases*, April, 1892.)—Brayton reports the thirteenth American case of xeroderma pigmentosum. The patient was one of a family of seven children. One brother had died at the age of nine from a malignant tumor, which had followed xeroderma pigmentosum. The parents were not related, nor could any hereditary taint be traced. The disease began, when the patient was six months old, as an erythema. This was followed by pigmented spots resembling freckles. The process began on the face, and in a year the face and neck were invaded. The extremities were then involved. At the

time of writing, the patient being sixteen years of age, her whole surface is affected, except the palms, soles, chest, scalp, back, and abdomen. In some portions the surface is covered with branny scales, resembling mild ichthyosis. In about one-half of the affected area the skin has become atrophic. In the atrophied parts the skin is as thin as parchment, and by its contraction has caused a narrowing of the mouth, diminution in the size of the ears, and a drawing down of the lower lids. The capillaries are enlarged, forming red spots of various sizes and shapes. There is no pain. The disease has not extended for several years, but, by atrophy, the red, brown, and black spots are being gradually replaced by white scars. Scattered over the diseased skin are a number of ordinary warts and some plaques resembling keratosis senilis. There are numerous dark-red, soft, compressible blood-tumors on the arms, legs, and face. These become pale and disappear. These patches, at the junction of skin and mucous membrane, have a tendency to fungate, and the author thinks that what Hutchinson has described and figured as multiple lupus of childhood is really this condition. There is at present at the base of the right nostril an ulcer which will not heal, and this may indicate the beginning of a malignant process, as such cases usually die from malignant tumors before the age of twenty. No treatment has been attempted aside from making the condition of the girl as comfortable as possible.

Remarks on the Histology of Xeroderma Pigmentosum.—In the same journal, Dr. S. Pollitzer, at the request of the editor, describes the histology of xeroderma pigmentosum. The first stage consists in hyperæmia. Accompanying this vascular dilatation there is an exudation of serum; leucocytes pass out into the tissues, together with red blood-corpuscles. Thus we have the material for the next step,—pigmentation. Since there is increased blood-supply, we find increased connective-tissue production, which passes on into sclerosis. This thickening of the connective tissue in some parts cuts off by pressure the blood-supply to other parts, while, at the same time, endarteritis occurs in many vessels, and we have atrophy. Collateral hyperæmia results in telangiectasis. In the third period we find various forms of malignant growths. In a specimen from one of Crocker's cases it was possible to see in one section sarcomatous and carcinomatous types of growth. The sarcoma was of the spindle-cell variety, and in some sections the small-round-cell form might be seen. The epitheliomatous tissue was formed by a projection downward of the interpapillary processes of the rete. In the specimen under consideration the author observed a change in the growth resembling the rare neoplasm known as *cylindroma carcinomatodes*. In other parts the carcinomatous structure was pushed aside by serum, giving rise to parenchymatous vesicles.

Treatment of Leucoplasia. (*Journal of Cutaneous and Genito-Urinary Diseases*, April, 1892.)—Brocq writes that Perrin has again taken up his



study of the treatment of leucoplasia. In view of the fact that the affection is often painful, and may result in epithelioma, he advises that the white plaques be destroyed surgically. The mucous membrane should be dissected off by means of the thermo-cautery or the galvano-cautery. By this method a firm cicatrix results, which prevents the formation of new plaques.

**A Case of Lichen Scrofulosorum.** (*Journal of Cutaneous and Genito-Urinary Diseases*, April, 1892.)—Grindon reports a case of lichen scrofulosorum which has the unusual features of having appeared in an adult female aged twenty-one, with good family history and enjoying fair health herself. The eruption was of the usual type, and occupied the back. The patient had at one time a dysidrosis of the palms. The patient was under observation for only a short time, and consequently the result of treatment cannot be recorded.

**The Histology of Molluscum Contagiosum.** (*Journal of Cutaneous and Genito-Urinary Diseases*, April, 1892.)—Piffard enumerates the propositions made by Dr. Macallum, in a recent article upon the histology of molluscum contagiosum, as being:

1. The seat of the disease is in the cells of the stratum Malpighii and not in the sebaceous glands.
2. The so-called molluscum bodies are not independent animal organisms.
3. They are degenerated epithelial cells.
4. The degeneration is of a corneous nature.

The writer states that the facts set forth in the first and third statement were maintained by him in his book, published in 1876. The evidence in favor of the second proposition was detailed by Dr. Piffard a year ago, and at that time he offered positive chemical and optical proof that the change was keratinous in nature, and not an amyloid degeneration, as some have claimed.

**A Case of Hutchinson's "Eruptio æstivalis bullosa."** (*Monatshefte für praktische Dermatologie*, March, 1892.)—Van Dort gives an account of a case of eruptio æstivalis bullosa, not because it presents unusual features, but that it may take its place among the recorded cases of this comparatively rare affection. The patient was a woman, thirty years old, who had an eruption which had recurred for twelve years in the spring and summer. The patient believed the cause of the eruption to be exposure to the rays of the sun, as, after a walk in the sunshine in summer, the disease would occur, or an exacerbation of a previously existing attack would take place. The disease manifested itself as erythematous spots and vesicles on the nose, cheeks, ears, and brow. In four or five days the eruption disappeared, the vesicles having ruptured, and the thin crusts thus formed having dropped off, leaving behind thin round scars. The lesions occurred only on the face, this being the only portion of the body exposed to the direct rays of the

sun, as the patient constantly wore gloves. The eruption was accompanied by a very slight itching. The vesicles were split-pea sized, tightly distended by a yellowish serous fluid, and not umbilicated. The differential diagnosis lies between this affection and impetigo or herpes or pemphigus. The author gives an account of experiments, made by Unna, Widmark, and others, to determine the pathological influence of the various rays of the spectrum upon the skin. That heat alone is not the only cause of the erythema caused by exposure to the sun's rays, is seen in the fact that this lesion has been observed in those sojourning in the Polar regions.

**Molluscum Contagiosum.** (*Journal of Cutaneous and Genito-Urinary Diseases*, March, 1892.)—Graham, as the result of the observation of a number of cases of mollusum epitheliale in an infant asylum, comes to the conclusion that the disorder is contagious, but that it requires close and intimate contact to further its spread.

**Chrysarobin in Chronic Ringworm of the Scalp.** (*American Journal of the Medical Sciences*, February, 1892.)—Duhring, as the result of an extended experience with a large number of chronic cases of ringworm of the scalp in a boys' school, arrives at the conclusion that chrysarobin was the most active and potent parasiticide employed. It was used in various strengths, but generally in the form of an ointment of one drachm to the ounce. While, as a rule, it was well tolerated, the writer advises care in its employment, especially in avoiding the face.

**A Study of Mycosis Fungoides, with a Report of Two Cases.** (*Journal of Cutaneous and Genito-Urinary Diseases*, January, 1892.)—Stelwagon and Hatch, in a very able and interesting paper on this rare affection, arrive at the following conclusions as a result of their clinical, histological, and bacteriological studies. They favor classifying this disease under the specific granulomata, as "we have to deal with a proliferative, eliminative process characterized by the production of exudates with non-absorption, and the production of tumor foci, poor in blood-supply, and readily undergoing cheesy degeneration. These tumor foci are made up of lymphoid cells lying in the loose meshes of an embryonic connective-tissue framework, the small, round cells huddling around the blood-vessels as in syphilis." Peculiar micro-organisms are present, which are capable of being cultivated; but their relation to the disease has not yet been determined. The disease, with one doubtful exception, has not been produced on animals.



## HYGIENE AND BACTERIOLOGY.

IN CHARGE OF A. C. ABBOTT, M.D.,

First Assistant in the Laboratory of Hygiene, University of Pennsylvania.

Instructions for the Prophylaxis of Typhoid Fever. (Instructions prophylactiques contre la fièvre typhoïde.)

The prophylactic measures that are at present recommended in France against typhoid fever are as follows: The patient must be isolated; must be kept clean; should have a separate nurse; neither food nor drink is to be taken by the attendant in the sick-room; food is never to be taken without previously having carefully washed and disinfected the hands; the sick-room must be thoroughly aired several times daily; the intestinal evacuations of the patient are to be disinfected with five-per-cent. solution of copper sulphate or five-per-cent. solution of chloride of lime; the linen is to be disinfected in two-per-cent. solution of either chloride of lime or copper sulphate; the clothing and bedding are to be disinfected by steam; if death occurs, the body is to be incased in a proper coffin and quickly buried.

In view of Karlinski's demonstration of the presence of the typhoid bacillus in the urine of twenty-one out of forty-four cases of typhoid fever, Uffelmann suggests that the urine in all these cases should be included in the process of disinfection.

Upon the Importance of Ozone as a Disinfectant. (Ueber die Bedeutung des Ozons als Desinficiens. *Zeitschrift für Hygiene*, Bd. viii. S. 95.) By Sonntag.

As a result of detailed study, both of the normal atmospheric ozone and of artificially-prepared samples of the gas, Sonntag reaches the conclusion that as a disinfectant it is useless.

His experiments were conducted with the view of determining the hygienic significance of atmospheric ozone, the therapeutic value of the artificially-prepared gas, and the probable value of artificially-prepared ozone as a disinfectant.

He found that the atmosphere containing 0.05 per cent. per volume of ozone, when allowed to act upon both the vegetative and spore stage of the bacillus of anthrax, was entirely without power to destroy the vitality of the organism. He found, moreover, that even less resistant organisms than the one named could be exposed for twenty-four hours to air containing more than four times the proportion of ozone mentioned without in any way losing their virulent properties.

It was not until as high a proportion of ozone as 13.53 milligrammes per litre was reached that any effect upon the life of the organisms exposed to it could be detected, and the result appeared with such irregularity as to be of but little importance.

Chemical Meat Preservers. (*Arbeiten aus dem Kaiserlichen-Gesundheitsamte*, 1890, vi. S. 119.)

Polenski has subjected to chemical analysis a group of proprietary mixtures that are employed as preservatives for meats, fish, etc., with the following results :

1. Sozolith is composed of sodium sulphate, sodium oxide, and sulphurous acid.
2. Berlinit is composed of boric acid, sodium chloride, and borax.
3. China preserving salt is composed of boric acid, sodium chloride, sodium sulphate, and sodium sulphite.
4. Brockman's salt is composed of sodium chloride, potassium nitrate, potassium sulphate, borax, and boric acid.
5. Australian salt is composed of borax and sodium chloride.
6. Barmenit is composed of sodium chloride and boric acid.
7. Magdeburg salt is composed of potassium oxide, sodium chloride, borax, and boric acid.
8. Heydrich's salt is composed of sodium chloride, potassium nitrate, and boric acid.
9. Triple preserving salt is composed of boric anhydride.
10. Australian meat preserver is composed of calcium oxide, sulphurous acid, sulphuric acid, clay, and iron oxide.

Upon the Poisonous Properties of Expired Air. (*Ueber die Giftigkeit der Expirations-Luft. Archiv f. Hygiene*, Bd. x. S. 367.) By Lehmann and Jessen.

In contradistinction to the results obtained by others who have investigated the subject, especially those of Brown-Séquard and d'Arsonval (*Comptes-rendus*, 1888, t. cvi. p. 106, and t. cvi. p. 165), Lehmann and Jessen have arrived at the conclusion that it is impossible, by the methods of experimentation now at our disposal, to demonstrate in the air expired by human beings a body capable of producing toxic symptoms. They found as a result of their work that—

1. The water obtained from the expired air by condensation, when unmixed with saliva and otherwise protected from contamination through outside influences, is a clear, odorless fluid, of neutral reaction, in which traces of ammonia and hydrochloric acid could be detected. Upon being heated it gave forth a peculiar odor. It contained a small proportion of organic matter, but by none of the methods employed by them could they detect the presence of alkaloids.

2. The only crystallizable bodies detected by them were crystals of lime, which came from the walls of the glass apparatus employed.

3. Neither the condensed vapor nor its distillate, when injected either subcutaneously or intraperitoneally into rabbits, had any effect whatever, though large doses were employed. Of two animals into the circulation of which the water had been injected one died certainly in consequence of the treatment and the other most probably.

4. Experiments upon human beings, in which the individual was caused



to inspire air that had passed through the condensed vapor of expiration, were entirely without toxic action.

## PATHOLOGY.

IN CHARGE OF A. J. SMITH, A.M., M.D.,

Professor of Pathology in the Medical Department of the University of Texas, Galveston, Texas.

Case of Echinococcus of the Spinal Canal. (*Brit. Med. Journ.*, November 28, 1891, p. 1144.) By Ransom and Anderson.

Ransom and Anderson report a case of hydatid tumor of the spinal canal of a male, aged forty-two years, with a history of long-continued pain, subsequent paraplegia, sensory disturbances, and marked trophic changes. The tumor was found post-mortem as a whitish, soft, cheesy-looking mass, about the size and shape of a horse-chestnut, attached by a pedicle to the arch of the tenth dorsal vertebra, and pressing for an inch upon the dura mater along its dorsal surface. The cord was softened for almost an inch, and for about half an inch was nearly fluid where the tumor pressed upon it. On cutting down on the spine in the substance of the "erector spinæ" muscle to the right of the lumbar spinous processes, two cavities were exposed, one as large as a walnut, the other of the size of a Tangerine orange, both the seat of more or less degenerated hydatids. There was no communication between the hydatid of the spinal canal and those in the "erector spinæ."

Maguire (*Brain*, vol. x., 1888), searching the literature of the present century, reports but twenty cases of hydatid of the spinal canal. In several of these the hydatids had eaten through the vertebræ from without; in one case the hydatid tumor pointed from the lumbar spine. In only four cases was the tumor within the dura, but in two cases of cysticerci the parasite was in the substance of the cord.

Upon Mixed Infections. (Ueber Mischinfectionen. *Centralbl. f. Bakteriöl. u. Parasitenk.*, January 2, 1892, p. 25.) By Dunin.

Before the Bacteriological Section of the Sixth Congress of Polish Physicians and Naturalists, held in Cracow July 17 to 21, 1891, Dunin read an interesting paper upon mixed infections. He divided the infectious diseases in which this occurrence might happen into two groups, the one, those in which one micro-organism causes the disease, and other bacteria give rise to complications; the second, those in which two micro-organisms work together to produce what is clinically a simple manifestation of disease. To all appearances in mixed infections the following factors are brought into play: 1. A diminution of the resistive power of the organism, favoring the actions of feebly pathogenic micro-organisms; 2. Opening of new avenues of infection (through the ulcers of the bowel or the cavities in the

lungs, etc.); 3. A sort of symbiosis or association of micro-organisms in which the one prepares the conditions for the development and pathological activity of the other. This last suggestion finds instance in the experiments of Roger, Maas, and others, where it has been noted that bacteria, which are entirely innocent when separate, acquire a decided and sometimes fatal virulence when together (as in the combination of the bacillus prodigiosus and the septic vibrio of Roger).

**Retroperitoneal Tumors.** (*Amer. Jour. of the Med. Sciences*, January, 1892, p. 17.) By Vander Veer.

Vander Veer, after reporting three cases of retroperitoneal new growths, two of which took their origin from the renal capsule and one from the suprarenal body, discusses the pathology of these tumors at some length. The most frequent point of origin, as determined by analysis of the various cases reported in medical literature, is the connective tissue of the capsule of the kidney, the next most frequent site being the suprarenal body or some indeterminate locality; and a smaller number are referred to the retroperitoneal lymphatics, the bodies of the vertebræ, the bones of the pelvis, and the root of the mesentery. The majority of these neoplasms are of a mixed nature, in which myxomatous and lipomatous elements are particularly likely to appear,—tissues which are histologically very closely associated, and which, especially the first, are not inconsiderably represented in the retroperitoneal space. Their position, considered in such relations, and their anatomy and vegetative tendency, evincing their embryonic character, tend to support the views of Cohnheim as to the origin of tumors. In addition to these elements, these tumors not infrequently contain sarcomatous elements, and, springing from the kidney, are not rarely mainly sarcomatous or myo-sarcomatous in nature. Even those growths whose constituent elements are of a benign character, as myxoma or lipoma, are not to be regarded by any means as innocent, since, from their size, tendency to recurrence, or position in relation to the kidneys or other adjacent viscera, their effect upon the economy may be anything but benign.

**Disseminated Lenticular Cancer of the Skin.** “Cancer en Cuirasse.” (*Amer. Jour. of the Med. Sciences*, March, 1892.)—Dr. J. M. Hyde calls attention to two cases of this rather unusual affection, both women, one forty-four years of age, unmarried and still menstruating, the other about sixty, the mother of three children, and eight years past the climacteric. In December, 1889, the first of these cases, the more nearly typical of the two, began to experience sensations of numbness and pain along the inner side of the right arm, which disappeared, to recur from time to time with increased severity and accompanied by œdema. At about the same time (January, 1890), during an attack of epidemic influenza, pains, intense and agonizing, were felt throughout the body, and simultaneously bright red spots appeared over the surface of the chest down as low as the waist. These were accom-



panied by burning sensations, and presently developed into nodules, varying in size from that of a pea to that of a nut, spreading over the breasts, the right shoulder, and the right side of the neck. The skin over these small tumors was red and glossy, but after several weeks became discolored, much as if from a bruise. Eventually, but gradually, the skin over the chest became more and more involved in the same manner, thickened, the nodules becoming no longer distinguishable in the dense, thick, smooth, and discolored skin; the tissues of the mammary glands became invaded, and the breasts were bound down to the thoracic wall firmly, as by a cuirasse. The thyroid body on the right side was invaded and enlarged; both tonsils and the right submaxillary gland were increased in size, as too were the post-cervical ganglia. Dysphagia became more and more pronounced from these causes; dyspnoea ensued from the firm and unyielding pressure exerted by the thickened thoracic skin; and, finally, in June, 1890, the patient died in an asthenic condition.

Microscopic examination of the skin showed that the epidermic elements over the nodules were not especially abnormal; the corium and subcutaneous connective tissues were very much thickened, however, made up of dense, relatively non-vascular fibrous tissue, in the midst of which were scattered without uniformity alveoli, irregular in size and shape, filled up with polyhedral or irregularly-shaped epithelial cells. These cells completely filled the spaces in the fibrous structure, and were not connected with the rete Malpighii, but arose as isolated groups, possibly from epithelial elements in the lymph-spaces in the deeper portions of the skin.

The second case was clinically very similar,—the only especial element being that in this instance a cancer of the left mammary gland existed prior, and possibly primarily, to the cutaneous cancer. In neither case was the privilege of a necropsy obtained, preventing the study of any metastatic tendency. This variety of cancer, known only in its graver manifestations as “cancer en cuirasse,” is a rather rare affection, classed as a form of scirrhous cancer, occurring in indeterminate ratio as a primary or a secondary affection. It affects either sex, but is much more frequent among females, and presents lesions isolated and widely separated over the surface, or more closely placed as in the above cases. The integument first takes on an erythematous appearance, evidently due to inflammatory change, but later an irregular brownish discoloration takes the place of the early redness. The degree of involvement of the skin varies with the number of cancerous nodules, the intense symptoms of thoracic constriction arising only in marked cases.

In the primary cases of this form of carcinoma one is struck by the similarity to the clinical features of an infectious neuritis, as, for example, leprosy,—not, however, in an etiological sense; but in its similarity to ordinary forms of cancer, in its distribution, in the probable origin of the cancer islets from the living cells of subcutaneous lymph-vessels, in the evident involvement of sensory and trophic nerve filaments, such a case should be of suggestive value to those who believe in a micro-organismal cause of cancers.

## CLIMATOLOGY.

IN CHARGE OF GUY HINSDALE, M.D.,

Lecturer on Climatology in the University of Pennsylvania, Philadelphia.

A NOTEWORTHY contribution to the literature of medical climatology has recently appeared in volume i. (p. 385) of a "System of Practical Therapeutics," edited by Dr. H. A. Hare.<sup>1</sup> The author, Dr. S. Edwin Solly, of Colorado Springs, by his experience in three continents and his habits of observation and record, has been enabled to furnish a well-digested summary of the subject. As yet little has been done in this country to arrange the vast amount of valuable data steadily accumulating. The best work that is done in the study of our climate finds expression in the transactions of the American Climatological Association and in the scientific publications of the United States Weather Bureau, through the work of Professors Harrington, Abbe, Loomis, Russell, and Hazen; Captain Allen, Lieutenants Finley and Glassford, and the other members of this able corps of meteorologists. Without a knowledge and application of the principles of meteorology all advice on the subject of climate must be empirical and all the reports on the value of health-resorts are liable to be illogical.

We cannot, however, agree with Dr. Solly in his statement that "countries situated between 45° and 63° of northwestern latitude are inhabited by the most robust and enduring of our species in respect to both physical and intellectual powers." While the northern half of Maine is included in these limits, we think they might have been extended so as to include at least a few of the inhabitants of the Green Mountain and Granite States, as well as portions of Massachusetts, Connecticut, and New York.

A few typographical errors are noted. On page 390 the barometric pressure at the equator should obviously be given as seven hundred and fifty-eight millimetres of mercury instead of seventy-five millimetres, and on page 399, in the paragraph beginning "most observations concerning increased pressure have been made in balloon and mountain ascents," it is evidently decreased pressure that is intended.

Dr. Solly has sorted the wheat from the chaff and has presented a systematic outline of the general principles of climate, paying especial attention to the results of the climatic treatment of phthisis. After sixteen years' experience in Colorado the author concludes that a consumptive treated in a resort open to the public in an elevated climate has three times as good a chance of recovery as has one treated in an open resort in a low climate, and twice as good a chance as one treated in a sanitarium in a low climate. A large array of evidence is brought forward to show that, next to purity of air, altitude is by far the most powerful of all the factors of climate in the successful treatment of phthisis.

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<sup>1</sup> Philadelphia, 1891.



The history of five cases of neurasthenia treated successfully by resorting to Colorado are given. Dr. Solly believes that where organic lesions are progressing and where there is nervous irritability with a good circulation, a sedative climate, such as a warm sheltered sea-shore, is the best; but in cases of mental depression, either mental or general, with possibly feeble pulse and cold extremities, the stimulating mountain climate is better.

Some of the Influences which affect the Power of Voluntary Muscular Contractions. (Reprinted from the *Journal of Physiology*, Nos. 1 and 2, 1892, pp. 58, with six charts.) By Warren P. Lombard, M.D., Assistant Professor of Physiology, Clark University, Worcester, Mass.

Meteorological changes exert a decided influence on muscular energy; Professor Lombard shows the effect of these and other agents, such as tobacco, alcohol, etc., in his original investigation. That the weather modifies man's powers we all believe, but hitherto it has been difficult to find any exact expression of the relation of changes of atmospheric pressure, temperature, and humidity to physiological conditions. Dr. Lombard's experiments upon himself show that, as a rule, ordinary atmospheric pressures, if constant, do not influence the power to do voluntary muscular work, but a rising pressure tends to increase voluntary muscular power, while a falling pressure tends to diminish it.

Previous observations have shown that when the barometer rises men are happier, more energetic, and expert in all their movements, while, if it falls, they are weak and lazy (Vivenot, Pelletan, and Foissac). The effect of changes of atmospheric pressure was the same whether occurring at a fixed station or noted after change of altitude. On going by rail and carriage to a mountain-top, fifteen hundred feet above the usual point of observation, the observer experienced a delightful exhilaration and a sense of increased power; the gain, however, was only apparent, for on measuring the amount of work possible by means of the apparatus employed, the power fell from 11.60 kilogrammetres to 5.85 kilogrammetres, and after descending, rose 3.50 kilogrammetres. After a descent on a subsequent occasion the power rose to 9.65 kilogrammetres.

Extreme heat also caused loss of power, but "temperature changes seem to act more slowly than barometric variations. Two or three days of heat were required to greatly reduce the strength, and similarly two or three cool days were necessary for a recovery of the power."

Diurnal variations of power were noted. Fatigue tended to lessen the strength as the day advanced, the fall being temporarily arrested by each meal; furthermore, the strength was greater from 5.20 to 6.30 P.M. than from 3.30 to 4.30 P.M.

Dr. Lombard finds that a rising barometer favors the action of exercise, sleep, and food, to increase the power, while a falling barometer opposes

them and may overcome their influence and lessen the strength. Tobacco and alcohol act vigorously; tobacco may prevent the effect of a rising barometer or of food from showing itself, and seems even to lessen the strengthening effect of exercise. Alcohol in small amounts increases the strength markedly, even when the barometer is rapidly falling. These influences last but an hour or two.

In connection with climatic treatment it will be well to remember the principles demonstrated in the physical laboratory.

**Nervo-Vascular Disturbances in Unacclimated Persons in Colorado.** (*Climatologist*, March, 1892.) By J. T. Eskridge, M.D., Denver.

**Details about Colorado Springs in the Climatic Treatment of Phthisis.** (*Medical and Surgical Reporter*, January 2, 1892.) By J. P. Crozer Griffith, M.D., Philadelphia.

The first of these papers is a physiological and clinical record of the effect of high altitude on the unacclimated. Dr. Eskridge has appended to this some valuable advice to visitors, with instruction as to how they should live during the process of acclimatization in Colorado. It is probable that of the suitable cases of pulmonary consumption that have sought Colorado a large number have been killed by untimely and excessive exercise. Unfortunately, many who go West for their health, particularly young men with incipient phthisis, have been advised by doctors at home that they must buy horses, live in the saddle, and scour the plains like the cow-boys. The stimulus of the rarefied air incites to exercise; the temptation is to overstep the limit of safety, for nowhere is the invalid fool so surely punished for his folly as in the Rocky Mountains. A safe guide is a clinical thermometer, and he who is wise will remain quiet in the presence of fever. All physicians in Colorado are united in giving words of caution on this subject, and if their advice were followed more strictly still better results would be reported from every elevated health-resort in the country.

Dr. Griffith's article is full of details regarding Colorado Springs, and would be of great value to any one intending to visit this resort.



# FORENSIC MEDICINE.

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IN CHARGE OF LORENZO D. BULETTE,  
Of the Philadelphia Bar.

## *LEGAL DUTY OF A PATIENT TO OBEY HIS PHYSICIAN'S INSTRUCTIONS.*

A CONSIDERATION of those cases in which courts of last resort have defined the extent to which a patient is legally required to obey his physician's instructions, and what circumstances of disobedience will constitute contributory negligence on the part of the patient, and thus exonerate the physician, becomes specially important in view of the assertion of an able writer on medical jurisprudence, to the effect that, in probably the largest number of cases of alleged malpractice, could the truth be known, it would be found that deviations from the strict line of duty on the part of patients had been the starting-point of a series of mischievous results, for which it is afterwards, and unjustly, sought to throw the blame on the physician.<sup>1</sup>

It is well-settled law that, in an action against a physician or surgeon for alleged malpractice, contributory negligence, on the part of the patient, consisting in disobeying the practitioner's instructions, is a proper and effectual defence. The contributory negligence which thus bars a recovery for an injury is that which co-operates in causing the injury; some concurring act or omission on the part of the patient to produce the injury, and without which the injury could not have happened. For example, if a patient, who has a broken arm dressed with an initial bandage, is requested by his surgeon to call in the course of a few hours, and fails to do so for several days, when gangrene has supervened, it would be such contributory negligence as would render no one responsible but himself. Or if the patient is requested to give notice of the dressing or other mechanical appliances becoming loosened or otherwise disturbed, and fails to do so, his failure, if injury resulted, would be looked upon as the proximate cause, and he could not recover damages for such injury. Negligence which is not the immediate or proximate cause of the injury, but which, occurring afterwards, merely adds to or aggravates the injury already inflicted, is no bar to a recovery; its only effect is by way of mitigating damages.<sup>2</sup> The information, which a physician may give a patient concerning the nature of

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<sup>1</sup> Ordroneaux, Med. Juris. § 83.

<sup>2</sup> Du Bois *vs.* Decker, 4 N. Y. S. 768.

his malady, is, however, a circumstance to be considered by a jury in determining the question as to whether the patient in disobeying his physician's instructions was guilty of contributory negligence or not.<sup>1</sup>

The relation of physician and patient is one of mutual obligation. The law imposes certain duties upon the patient as well as upon the physician; and he who fails in obedience to the requirements of the legal duties thus imposed must himself suffer the consequences for any injury directly caused by such failure.

While the law requires that the physician bring to his employment reasonable and competent medical knowledge and skill, and that he exercise the same at every stage of the treatment, it, at the same time, requires that the patient exercise, in the first place, ordinary care and prudence in the selection of a physician or surgeon, and then obey the reasonable instructions and directions of the latter.

This rule does not require of the patient mere passive acquiescence in the treatment of his medical adviser; but it does require that he, at all times, actively co-operate with his physician in such a way as to further the object of the treatment to which his body is being subjected. Having used reasonable prudence in the selection of a physician, the patient must submit to such treatment as the physician prescribes. But, if he will not, or under pain cannot, his failure so to do is his own misfortune, for which he cannot hold the physician responsible; since one may not take advantage of his own wrong, or charge his misfortune to the account of another. An insane patient is not responsible for disobedience to his physician's instructions. The condition of such a patient calls for the exercise of a higher degree of care and attention on the part of the physician.<sup>2</sup>

Parents are likewise bound by the same duty of obedience to the treatment and instructions of the medical attendant of their infant children. Where the parents of the patient, a boy eight years of age, were also in charge of him and nursed him, but failed to obey the directions of the physician in respect to his treatment and care, thereby contributing to his injuries, the patient could not recover damages therefor.<sup>3</sup>

The rule in respect of the degree of obedience to the treatment and directions of the medical attendant should, however, be stated with this qualification: that it must be such as a physician or surgeon of ordinary skill would adopt or sanction. For if the treatment be painful, injurious, and unskilful, the patient is not bound to imperil his health and perhaps his life by submission to it. As, where a surgeon showed want of ordinary skill in not detecting the kind of injury for fifteen days, and the patient suffered pain and incurred increased expense in consequence thereof, he was justified in afterwards refusing to submit to a proper remedy and recovered

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<sup>1</sup> *Geiselman vs. Scott*, 25 Ohio, 86.

<sup>2</sup> *People vs. Hospital*, 3 Abb. N. C. 229.

<sup>3</sup> *Potter vs. Warner*, 91 Pa. St. 362.



damages for the special injury.<sup>1</sup> On the other hand, where a surgeon directed the patient to observe a condition of "absolute rest" as a part of the treatment of a swollen and diseased ankle and foot, and that direction was such as a physician of ordinary skill would sanction, the patient failed to recover in an action against the surgeon for damages for alleged malpractice.<sup>2</sup>

It is necessary, therefore, before the practitioner can shift the responsibility from himself to the patient, on the ground that the latter did not submit to the course recommended, that he show that the prescriptions were proper and adapted to secure a favorable result. The practitioner must satisfy the jury on this point, and in order to do so he may call to his aid the science and experience of his professional brethren. But he may not cover his own want of skill by raising a mist out of the refractory disposition of his patient.<sup>3</sup>

A very recent case<sup>4</sup> well illustrates not only the effect of a failure to observe this last requirement, but also the effect of the patient's refusal to obey the surgeon's prescription after being subjected to unskilful treatment. The injury for which damages were sought was alleged surgical malpractice, which consisted in delaying for a period of ten days to amputate a patient's foot that had been crushed by a locomotive engine, and the action was brought against the resident surgeon of the city almshouse, whither the patient, owing to his indigent circumstances, was taken. An interval of ten days elapsed after admission to the hospital, when the surgeon amputated the patient's leg above the ankle-joint; and seven days thereafter, gangrene having set in, he again amputated the leg at the knee-joint. After the second amputation the leg did not properly heal, but became a running sore, and at the time of the trial the bone protruded some three or four inches. Evidence was given at the trial from which the jury might find that the bones of the foot were so crushed that immediate amputation of the injured portions was necessary, and that the appearance of gangrene was in consequence of the delay of ten days in the operation; and that, in the second operation, the defendant neglected to save flap enough to cover the end of the limb and bone, and that the subsequent protrusion of the bone was owing to this neglect. The question of the surgeon's liability consequently became one for the jury. "We are aware," says the Court, "that he claimed to have waited ten days before operating for the purpose of seeing whether the foot could be saved, and that a physician and surgeon will not be held liable for mere errors in judgment. But his judgment must be founded on his intelligence. He engages to bring to the treatment of his patient care, skill, and knowledge, and he should have known of the

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<sup>1</sup> *Fowler vs. Sargeant*, 1 Grant, 355.

<sup>2</sup> *Geiselman vs. Scott*, 25 Ohio, 86.

<sup>3</sup> *McCandless vs. McWha*, 22 Pa. St. 261.

<sup>4</sup> *Dubois vs. Decker*, 29 N. E. Rep. 313 (January, 1892).

probable consequences that would follow from the crushing of the bones and tissues of the foot."

In submitting the case to the jury, the defendant asked the Court to charge that "if the plaintiff did not obey the defendant's instructions, and this contributed to an aggravation of the injury, the plaintiff cannot recover." The Court declined to charge in the form in which the request was put, and an exception was taken by the defendant. It appeared from the testimony of the defendant that, after the second amputation, he dressed the stump and put the plaintiff in position by elevating the limb so as to prevent hemorrhage and too much pressure upon the arteries, that the plaintiff did not keep in the position in which he was placed, and got his leg to bleeding, and that he presumed that the bleeding interfered with the healing of the limb. It also appeared that, some time after the second amputation, the plaintiff refused and neglected to take the medicine that was left for him by the defendant, and that subsequently, after the defendant had ordered him to be removed to another room so as to avoid liability of contracting erysipelas from a patient that had been brought to the almshouse afflicted with that disease, he left and went away. The Court, in continuing, said, "While the removing of the limb from the position in which it was placed may have produced the bleeding, and thus, to some extent, impeded the healing, and his going away at the time he did may also have further aggravated the difficulty, these facts would only tend to mitigate the damages, and would not relieve the defendant from the consequence of previous neglect or unskilful treatment. As to the prescription, we are not told what it was, or what it was for, and the jury was therefore unable to determine whether or not the condition of the patient would have been materially changed by its use."

Examples of cases illustrating the application of the above rules might be further multiplied; but a sufficient variety has been introduced to make clear the nature and extent of the obedience that a patient is legally bound to yield to the instructions of his medical adviser. The patient's duty in this respect may, therefore, from the examples adduced, be thus briefly summarized: Having used ordinary prudence in the selection of a competent physician, and having received from the latter accurate information as to the true nature of his malady, he is then obliged to submit to such reasonable treatment, and to obey such reasonable directions as the physician may give. And the fact that it is disagreeable, or difficult, or painful, does not relieve him of the legal obligation of obedience.



## BOOK REVIEWS.

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**NERVES OF THE HUMAN BODY.** By Alfred W. Hughes, Lecturer on Anatomy, etc. Edinburgh, 1890.

This work presents an attractive appearance.

The author says that his object has been to attempt to lighten the task of students of medicine in acquiring a knowledge of the nerves of the human body. We fail to see how this is to be accomplished by the work which he has produced. Without one word of explanation, he has followed the classification of the cranial nerves into nine pairs, the old arrangement of Willis, which is rarely alluded to by anatomists nowadays, who recognize the more reasonable view of Sömmering, which distinguishes the facial, auditory, glosso-pharyngeal, pneumogastric, and spinal accessory as individual cranial nerves, and therefore consider that there are twelve pairs. We lay so much stress upon this point because we believe that the chief difficulty which students formerly had to contend with in mastering this part of anatomy was owing to the confusion arising from the old classification. It is singular that any one should disregard the teaching of the accepted authorities in his own country, and should think it worth while to expend so much time in elaborating old diagrams, for we find nothing in Dr. Hughes's plates which has not been depicted in text-books since the anatomy of the nerves was first unravelled.

G. McC.

**DISEASES OF THE EYE: A HAND-BOOK OF OPHTHALMIC PRACTICE FOR STUDENTS AND PRACTITIONERS.** By G. E. de Schweinitz, M.D., Professor of Diseases of the Eye in the Philadelphia Polyclinic; Lecturer on Medical Ophthalmoscopy in the University of Pennsylvania, etc. With two hundred and sixteen illustrations and two chromo-lithographic plates. Published by W. B. Saunders, Philadelphia.

The influx of new books on diseases of the eye is in touch with the rapid strides made in the field of ophthalmic science. Our American ophthalmologists have not kept in pace with the same alacrity that has distinguished our European confrères, and when a work is produced which is destined to become a hand-book, not only for students of the University of Pennsylvania, but for students of other medical colleges in this country, we must give it more than a passing glance.

The latest and one of the best works on ophthalmology is from the hands of Dr. de Schweinitz. The book is thoroughly up to date, and while we find some evidence of haste, it is certainly a work which not only commends itself to the student, but is a ready reference for the busy practitioner. Our author has "picked the basket," and has not overlooked the best methods of treatment outlined by the German and English schools, to which have been added the methods of treatment thoroughly in accord with the diseases incident to this climate and country.

The first part of the work, by Dr. Wallace, treats of refraction, and, while it is "over the heads" of the majority of students, it gives a clear and concise explanation of that field of ophthalmology, especially necessary to a thorough knowledge of optics.

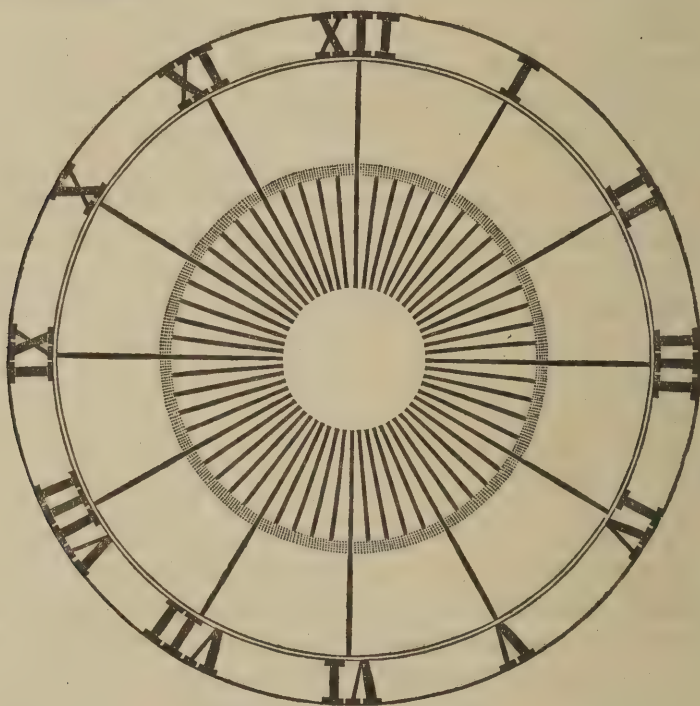
The chapter on retinoscopy, by Dr. Jackson, treats of this subject as the "light test" for ametropia. This is as it should be, and while all preceding authors (Fox and Gould excepted) have insisted upon its being a "shadow test," they were scientifically wrong. The shadow test was always confusing to students, and should long

ago have been discarded, as our author has so thoroughly and properly done. Those chapters on the surgery of the eye are not quite up to the plane with the balance of the work. Buram's operation for distichiasis and shrinking of the cartilage following granular lids is ignored, and substituted by a modified operation described as Green's method. This operation being more complex in its detail and never as satisfactory in its results, a number of the older and now obsolete operations have been described and illustrated, not so much to be followed as to be avoided. The details of performing a cataract operation are clear and precise. The upward cut should be

by the finished operator,—i.e., with one sweep, and

details of omission, but rather place the fault as one of commission. — THE WORK is a credit to our author and will meet with a deserved reception at the hands of all devotees of ophthalmology.

L. W. F.



A NEW ASTIGMATIC TEST CHART.

This astigmatic test chart has been devised by L. Webster Fox, M.D., of Philadelphia. The figure above explains itself. The dotted circle at the periphery of the finer radiating lines is colored red, which aids materially in concentrating the attention of patients to the inner circle, when, if astigmatism exists, the meridian is easily ascertained. John L. Borsch & Co., opticians, 1324 Walnut Street, Philadelphia, are the makers.

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EDITOR.



# INTERNATIONAL MEDICAL MAGAZINE.

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## ORIGINAL COMMUNICATIONS.

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### *A CASE OF MYELITIS WITH VERTEBRAL TUMOR.*

BY MARY PUTNAM JACOBI, M.D.,

Attending Physician to the New York Infirmary for Women and Children.

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THE history of the case I have the honor of reporting to the Neurological Society presents three unavoidable defects. I was able to observe the patient during only a part of his illness, and the record of the rest is found in the report of the attending physician. The case was seen in the country, at a great distance from New York, during the summer vacation, and when I was unprovided with instruments of precision required in diagnosis, especially electric batteries. Finally, although the case terminated fatally, no autopsy could be obtained, as I had left the place some weeks, the attending physician just a week, when death occurred.

In spite of these deficiencies, however, I think the record of the case presents sufficient interest to justify its presentation here to-night as a contribution to the etiology of spinal disease.

Boy, fifteen years old; parents dead; living with adopted parents; so exact antecedents unknown.

I first saw him July 31, 1890, and obtained the following history from Dr. Adamson, who had previously attended him:

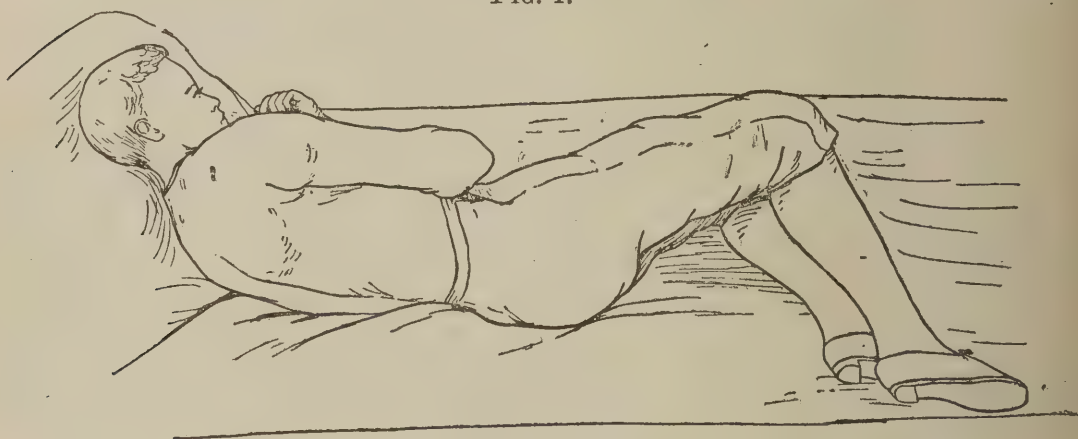
During the previous winter the boy was said to have become round-shouldered and began to stoop somewhat in walking. No vertebral curvature appeared then or at any time during the illness.

Towards the end of April—thus three months before my first observation—the boy's back and neck had begun to be rigid. Some hyperæsthesia appeared in the arms at the same time, and was soon followed by severe

attacks of pain, starting from the neck and running along both the upper extremities. Coincidentally, the motor power began to diminish, and after two months' duration of these symptoms, about the end of June, the boy became rather suddenly paraplegic. The paraplegia was not absolutely sudden, but developed in the course of two or three days, when the loss of both motility and sensibility were found to be complete, the paralyzed limbs flaccid and their reflexes abolished. The rectal and vesical sphincters were paralyzed at the same time. This condition of the lower limbs was preceded in them by none of the irritative symptoms of pain, hyperæsthesia, or rigidity which had existed in the upper extremities, but there had been an occasional jerking or spasmodic contraction of the hamstring or sural muscles.

On the occurrence of the paraplegia, the attending physician wrote to a New York orthopædist about the case, and received from him the opinion that it was undoubtedly one of Pott's disease of the cervico-dorsal region, and should be treated by a spinal brace. Directions were given for taking the measurements needed for fitting such a brace. It was at this time (July 31) that I was asked to see the patient, and received from the attending physician the history already narrated.

FIG. 1.



I found the boy lying on his back, which was rigid in the cervical region, but exhibited no trace of angular curvature. The boy was entirely unable to move his legs, and suffered great pain on any attempt to move the head or shoulders. The temperature was 102° F., and had been known to be febrile for several days. The fever had very possibly been of much longer duration. The symptom chiefly complained of was that of violent paroxysms of pain, which, starting from the cervical region of the back, extended down the arms, sometimes both, sometimes predominantly on one side. Under large doses of morphine or laudanum these pains could be controlled; but it was stated that, before resorting to hypodermics, excessive doses of laudanum had been administered without either securing relief or producing any characteristic symptoms. The physician believed that stomach absorption must have been temporarily arrested.



The pains could not be traced along any special nerve-tract, but seemed more intense on the outer than the inner surface of the arms. At the time I saw the patient he was under the influence of morphine, was then temporarily free from pain, and also from hyperæsthesia. There was neither anæsthesia nor analgesia, but a sensation of formication over the arms.

The extensors of the fingers of both hands were paralyzed, but not those of the wrist. The patient could bend the hands completely backward, but could not extend any finger-joint. The fingers were, indeed, permanently and strongly flexed at both the second and third joints. The muscles of the forearm were moderately atrophied; those of the hand not conspicuously so on the 31st of July, but a fortnight later the interossei were markedly atrophied, and the hands had assumed a typical claw position. The legs were completely paralyzed, as they had been for a month. I did not, however, find them flaccid, and the observation of flaccidity belongs only to the history as given to me.

Anæsthesia and analgesia were complete over the entire surface of the lower extremities, and cutaneous anæsthesia extended over the trunk as high as the third rib on the right side and the seventh on the left. To deep pressure, however, sensibility began at the level of the lowest rib. In the left axillary space, about the level of the sixth rib, deep pressure was not only felt but caused some pain. The boy would not lie on the left side, because, he said, he had a feeling of a lump in this locality,—that is, in the axillary line, at the level of the sixth rib.

The legs of the patient were semiflexed at the knees; the thighs on the trunk. Passive extension was facile at both joints. Clonic contractions frequently affected the sural muscles. There was moderate atrophy of all the muscles. The patellar reflex was entirely absent. Stretching the tendo Achillis by forcible dorsal flexion of the foot caused a single faint trepidation or a movement of spreading of the toes, but a repetition of the manœuvre had no effect at all. The reflex excitability seemed to be exhausted on the first occasion.

A fortnight later reflex excitability in the lower extremities became exaggerated in a way to be presently described; but the condition of the patellar reflex and of ankle-clonus did not change. The epigastric reflex was marked. Paralysis of the vesical sphincter persisted, and there was also incontinence of fæces, but this occurred only every two or three days, as the bowels were constipated.

A bed sore had begun to appear on the right malleolus. The abdomen was extremely tympanitic. The appetite of the boy was rather excessive, and several attacks of indigestion with vomiting seemed due rather to indiscreet indulgence of this appetite than directly to the disease. There were no cerebral symptoms at all. The pupils were much contracted, but, in view of the constant influence of morphine, it was difficult to say whether this fact indicated irritation of the oculo-pupillary centre. No electrical observations could be made.

Two days after the foregoing observation was taken, the boy was seized (August 2) with a very severe attack of vomiting. On the 3d of August the respiration became diaphragmatic, the ribs remaining motionless, while the diaphragm protruded markedly at each inspiration, retreating in expiration. The patient became dyspnoëic, the temperature subnormal, râles were heard in the trachea and over the lungs. Death from paralysis of the respiratory centre seemed imminent; nevertheless the symptoms spontaneously abated, and by the 5th of August had disappeared.

On the 12th of August I saw the boy for the second time, and found that a few more symptoms had developed in addition to those which have been described. I have already mentioned that on this day atrophy of the interossei of the hands was marked, and that the hands had become claw-shaped.

The elbow flexors had become markedly rigid. The forearms were held permanently in semiflexion, and an attempt to extend them was resisted as extremely painful, and was apparently impossible. The forearms were frequently jerked spasmodically. Similar clonic contractions affected the legs. The knees were semiflexed, but easily extended.

The paralysis of motility and sensibility continued to be complete in the lower extremities. But at this date, tickling the soles of the feet produced marked reflex retraction of the legs. On the right side there was a single retraction; on the left, two or three, with increased flexion at both hip- and knee-joint.

If the entire left leg was grasped and extended, several involuntary movements followed in it of considerable force, both in an antero-posterior direction and laterally, the thigh moving from side to side. These same movements occurred in the left limb, when the right was grasped and extended, while they did not then take place in the right at all. The violent pains in the arms and cervical region persisted, except when the boy was under the influence of morphine. The temperature oscillated around an average of  $102^{\circ}$ .

The condition of the patient at the time that the case was first presented for diagnosis embraced two sets of symptoms: 1, those of a meningitis in the lower cervical region, with exudation compressing the nerves of the brachial plexus; 2, symptoms of a transverse myelitis in the mid-dorsal region.

The first group of symptoms consisted of: 1. Violent paroxysmal and long-continued pains, starting from the level of the last cervical and first dorsal vertebræ, and radiating along the entire extent and over the entire surface of both arms, but most intense on their outer sides. 2. Paræsthesia and hyperæsthesia over the same area; no diminution of sensibility. 3. The muscles of the forearms and the interossei of the hands were atrophied, the atrophy beginning and becoming most marked in the latter. 4. A progressive moderate diminution of motor power in the arms had accompanied the pains; and complete paralysis of the interosseous



muscles existed at the time of the first observation. The latter symptom served to locate the lesion at the level of the first dorsal segment of the cord. 5. Rigid and painful contraction of the flexors of the arm followed after some weeks of the other symptoms, and was accompanied by frequent spasmodic jerking of the arms, showing exaggerated reflexes. The arms were not only flexed, but strongly adducted.

The hands at the same time assumed a characteristic position, moderately flexed at the wrist, strongly flexed at the second and third phalanges of the fingers, while the first phalanges were extended from paralysis of their flexors, the interossei.

There was therefore a combined group of symptoms of irritation and paralysis such as is most characteristic of an exudative meningitis of the lower cervical region, extending from the first dorsal to the eighth and seventh cervical segment of the cord. At this level existed great sensitiveness on pressure, and rigidity and stiffness of the cervico-dorsal muscles. Everything pointed therefore to a cervical pachymeningitis of the lower arm type, and this most plausibly associated with some morbid process in the first dorsal and last cervical vertebræ. There was no indication that the cord at this level was invaded.

The paraplegia, on the other hand, was not the *paraplegie douloureuse* of a vertebral lesion, but the complete anæsthetic paralysis, rapidly developed, of an acute transverse myelitis. Cutaneous anæsthesia and analgesia were absolute over the entire area of the lower extremities, and the trunk as high as the seventh and third ribs; deep anæsthesia as high as the lowest rib. Instead of the motor paresis or limited palsies of the upper extremities, there existed in the lower absolute loss of motility. The position of the limbs was due to the preponderance of the flexor muscles over the extensors when all were paralyzed, so that the feet were flexed on the legs, the legs on the thighs, the thighs on the trunk. But, the reverse of what obtained for the arms, there was no rigidity at these joints; passive extension was facile until late in the disease. The limbs were flaccid at the onset of the paralysis, and the tendon reflexes lost. Cutaneous reflexes persisted as high as the epigastrium, and after two or three weeks of the paraplegia, reflexes in the legs were found intensely exaggerated, although, probably on account of the contraction then existing, the patellar-tendon reflex could not be obtained. The ankle-clonus, however, faintly observed at first, became much more marked, and spontaneous reflex jerkings grew more and more violent as the disease progressed. The legs showed no atrophy until emaciation became general, again contrasting with the arms, where localized atrophy was an early symptom. But a trophic lesion occurred very early, in the shape of a bedsore on the right malleolus. The sphincters were paralyzed from the beginning of the paraplegia. This combination of conditions served to exclude lesion of the lumbar segment, and to localize the myelitis chiefly in the lower dorsal region, at the level of the last ribs, the highest point of complete loss of sensibility. It is known

that sphincter paralysis and trophic lesions of the lower limbs may be caused by a transverse myelitis, involving both conductor-tracts and the central gray matter at any level of the cord, and that the limit of such disease is to be established by means of the level of the anæsthesia, or the point at which the reflexes disappear, and their maintenance and exaggeration below a certain level, when conduction to the brain had been interrupted above this. The initial loss of reflexes and flaccidity of the legs was an inhibitory phenomenon of shock, transitory therefore, and not indicating any permanent lesion of the central gray of the lumbar region. (Gowers.)

One point remained obscure,—namely, why, with a complete transverse lesion of the cord, the anæsthesia should not have been exactly bilateral, but should extend so much higher on the right side than on the left. According to the law of decussation of the sensory tracts, this fact should imply a lesion of the left half of the cord, considerably higher than that which affected the right.

Again, there was a persistence of sensation upon deep pressure, at a level at which cutaneous loss of sensibility was complete. The pain of which the patient complained upon the left side of the chest seemed an indication of a unilateral hyperæsthetic zone, such as is usually found above the limit of anæsthesia, and which I did not otherwise demonstrate. It is noteworthy that this hyperæsthesia, which extended some distance up the axillary region, and was not precisely defined, was on the side opposite the greatest extension of anæsthesia. This would be the case with a hemi-lesion of the cord on the left side, in addition to the transverse lesion, which involved both. The dangerous accidents which occurred early in August, with temporary paralysis of the intercostal muscles, indicated a transient intensification of morbid process throughout the dorsal segment of the cord, and above the presumed level of the transverse lesion.

The morbid process in the vertebræ, which is most common, most frequently complicated by pachymeningitis at its own level, and by painless paraplegia of the lower extremities, is undoubtedly tubercular caries. Such was the rather snap diagnosis made at a distance by an orthopædist, who had been consulted by letter about the case. The following circumstances, however, tended to contradict this diagnosis:

While the long-standing dull pain and stiffness in the cervico-dorsal region suggested a vertebral caries, the extreme violence of the pains, when the pachymeningitic symptoms once set in, are entirely contrary to what is observed in this disease. The meningeal lesion demonstrated by Michaud as the origin of compression myelitis in Pott's disease is, moreover, much less extensive than must have existed in this case; even when paraplegia occurs, the symptoms of such intense irritation of the nerve-roots of the brachial plexus are wanting. Again, the characteristic paraplegia of Pott's disease is due to a descending sclerosis of the pyramidal tracts; the paralysis is motor, spastic, not sensori-motor and flaccid; the patellar reflex is exag-



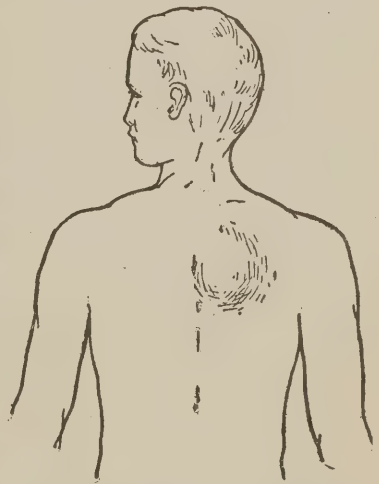
gerated, not lost ; the sphincters are intact ; there are no bedsores. Finally, before a Pott's disease has produced paraplegia, it has sufficiently advanced in the vertebræ in which it originated to break these down ; so that an angular curve precedes, or is a close concomitant of, the paralysis.

No such curvature ever developed in the case of this boy during the five months he was under observation.

The possibility of a vertebral tumor, which did, in fact, appear in September, was naturally discussed in July. It was excluded in the diagnosis chiefly on account of the chronic fever, a symptom absent from the cortege of those produced by tumor. In all the twenty-nine cases of vertebral cancer contained in the two reports of Edes and of Amidon, fever was absent. Its presence in this case seemed to point conclusively to the presence of a subacute meningo-myelitis, primarily located at the level of the first dorsal vertebra, where the lesion was almost exclusively limited to the meninges ; and with a secondary extension to the dorsal cord, causing a focus of acute softening in its lower segment. The cause of such a meningo-myelitis, acute infections being excluded, seemed to lie between a tubercular or a syphilitic infection, with an immense probability in favor of the former. For the benefit of the doubt, iodide of potassium was administered for a while in large doses, but without any benefit.

At the beginning of September a new symptom developed,—a tumefaction appeared on the right side of the neck, just at the junction of the cervical and dorsal regions, and close against the spine. At first obscure, this became rather rapidly more distinct and prominent, both by reason of growth and also because the wasting and atrophy of the surrounding tissues brought it into greater relief. By the end of September this tumor measured four inches in its long diameter,—parallel to the axis of the body,—and two and one-half inches transversely. It was firm, hard, immovable, non-fluctuating,—painless on pressure. When it first appeared, the skin over it was reddened, but afterwards returned to a normal color.

FIG. 2.



There were several unilateral symptoms in the case which should be noted in connection with the fact that the tumor appeared entirely on the right side of the spine. Thus, in the middle of August, when the reflex excitability of the lower limbs had increased, the increase was much less on the right side than on the left. Tickling the left sole was followed by several retractions of the foot ; of the right, by but one. Forcible extension of either right or left leg produced involuntary movements in the left leg, but not in the right. It would seem, therefore, that the right central segment of the reflex arc was, to some extent, injured, while the left was intact.

The higher limit of the anæsthesia on the right side has already been mentioned, but this pointed to a lesion of the cord higher on its left half.

Finally, during September, the temperature began to rise to 103° and 104°, and attacks of sweating occurred in both arms, and also in the face, but limited to its right side. The right side of the face would become red and hot, while the left side remained dry and cool. Thus there was evidence of vaso-motor paresis on the right side, dependent probably on a lesion of the sympathetic fibres or the inferior cervical ganglion on the right side. From the situation of the tumor, indeed, this ganglion could not fail to become involved in it. I did not see the patient at this time, and do not know what may have been the condition of the pupil.

Emaciation set in and progressed rapidly, depending, evidently, not only on wasting of subcutaneous fat, but also on generalized atrophy of the muscles. The skin seemed to be tightly stretched over a bony framework.

The bedsore on the malleolus extended, and others appeared over the spinous processes of the vertebræ, over the scapulæ, sacrum, and iliac bones. That over the sacrum was about six inches in diameter, and poured out an immense quantity of pus, in which were mingled fragments of necrosed bone.

While the pain continued to be very acute in both arms, partial anæsthesia set in at the same locality, so that the patient became unable to locate the point of insertion of the hypodermic needle. Until the last week in September it was possible to keep the boy fairly comfortable with a grain of morphine a day, but during the last three weeks of life, in October, as much as nine grains a day were often administered with very little effect.

The tonic retractions of both extremities, and the clonic contractions and reflex excitability of the lower limbs, continued to increase to the end of life. The right leg became completely flexed on the thigh, so that the heel was raised from the bed. The right thigh was more than semiflexed on the abdomen, and strongly adducted. The clonic contractions were so violent as to drag the body down in the bed, and cause the heels to strike the buttocks. A slight touch on either the foot or leg elicited violent contractions of the limb.

During the last eight weeks of life the patient suffered from a persistent bloody diarrhœa, having sometimes as many as eight or ten stools a day. Blood was often passed in clots. Several times hemorrhage occurred from the nose. Twice in September he became almost blind, but on each occasion only for a day. The appetite, which had been ravenous in the early summer, failed completely in October. The boy suffered much from nausea, and often for twenty-four hours would not take more than half a pint of nourishment. He thus sank gradually, and died of exhaustion at the end of the third week of October. His death occurred after both myself and the attending physician, Dr. Adamson, had left the town, so that, most unfortunately, no autopsy could be obtained.

Dr. A. B. Judson, of this city, has recently read before the American



Orthopædic Association<sup>1</sup> a report of three cases, in each of which malignant disease of the vertebræ was supposed for a time, by himself and other observers, to be Pott's disease.

Dr. Judson's report is unfortunately of the most summary character, and presents, as a conclusion, merely the three following points of diagnosis: 1, deformity, present in Pott's disease, absent in malignant disease; 2, local disability, and, 3, local pain, both absent in Pott's disease and present in malignant disease.

In 1886, Dr. Edes, of Boston, reported five cases of malignant disease of the spine, associated with painful paraplegia,<sup>2</sup> and in 1887, Dr. Amidon,<sup>3</sup> of this city, reported three cases, in all of which a correct diagnosis had been made by the writer during life. The same paper also contained a tabulated abstract of twenty-one other cases. In almost all of these twenty-nine cases the motor and sensory paralysis of the lower extremities was incomplete, and the motor power was often as much impaired by the pain as by real paralysis.

This condition is the reverse of what obtained in my case in the lower limbs, but entirely resembles that of the upper extremities.

In many of the above collection of cases carcinomatous disease existed in other organs than the spine, and in some had been clearly recognized before the spinal symptoms occurred. No evidence of visceral disease was presented by the boy whose case I have related, unless the bloody diarrhœa of the last eight weeks of life would be so considered. This symptom was observed in several of the cases cited by Edes and Amidon. Nevertheless, the tumor which appeared in this case seven weeks before death resembled a sarcoma or a carcinomatous tumor much more than anything else. It lacked the elasticity or fluctuation of a cold abscess; on the contrary, it was extremely hard and firm. Its locality was quite different from that assumed by purulent infiltrations, even when these originate in a tubercular focus in the cervico-dorsal region. The size of the tumor again was much greater than is assumed by a solitary tubercular tumor, nor does the latter tend to grow beyond the vertebral canal, and invade the adjacent tissues.

The case I have found recorded, which most closely resembles mine, is related by Dr. Gee, in the St. Bartholomew Hospital Reports for 1882. The abstract reads as follows:<sup>4</sup>

Admitted to hospital in February, after six weeks of undefined languor and malaise. On admission the right arm was paralyzed, the right upper eyelid drooped,

<sup>1</sup> September 24, 1891.

<sup>2</sup> Malignant Disease of Vertebræ with Paraplegia Dolorosa: R. T. Edes, Boston Medical and Surgical Journal, June 17, 1886.

<sup>3</sup> Malignant Disease of the Spine: New York Medical Journal, February 26, 1887, Study of Cruveilhier's Paraplegic Douloureux.

<sup>4</sup> This abstract is taken from my article on myelitis, in Keating's Cyclopædia of the Diseases of Children.

the right pupil was rather smaller than the left. The muscles of the paralyzed arm no longer responded to electricity. No loss of cutaneous sensibility. Superficial reflexes well marked. No patellar reflex. In March, legs became paraplegic and flaccid. In April, moderate fever, and shortly after, the breathing became wholly diaphragmatic. Loss of faradic contractility in all the muscles of the legs, except the gastrocnemii and hamstring muscles. In May, cutaneous sensibility diminished. There was incontinence of fæces. An elastic swelling appeared at the right side of the upper dorsal and lower cervical vertebræ. Child perspired excessively when asleep. Vertebral caries was suspected with an abscess involving the inferior sympathetic ganglion, and accompanied by a subacute descending poliomyelitis. Child died in June. At autopsy found a sarcomatous tumor springing from lower cervical and first three dorsal vertebræ, and connected with three upper ribs. The spinal cord was reduced in size opposite the last cervical and first dorsal vertebræ and softened throughout. The gray substance was pale and ill-defined. In the cervical enlargement, the large motor-cells were found swollen, and often deprived of their nuclei and processes. Thus the tumor had spread in two directions,—towards the right inferior cervical ganglion, which had been destroyed, and internally towards the cord, which had become affected with a subacute myelitis chiefly central.

Dr. Gee remarks that the flaccidity of the legs observed during life and contrasting with the rigidity which is characteristic in the compression myelitis of vertebral caries, should have sufficed to avert the error of diagnosis.

The points of resemblance between these two cases are the following :

In both there were several weeks' prodromata of languor and undefined malaise.

In both the defined disease began with symptoms in the upper extremities, and was followed in a few weeks by a flaccid paraplegia of the lower extremities.

In both fever of moderate severity set in, shortly after the occurrence of the paraplegia.

In both, shortly after the disease had thus become febrile, there were few acute symptoms, during which the breathing became wholly diaphragmatic.

In both motor paralysis was accompanied by sensory paralysis, but in Dr. Gee's case the latter was partial, and observed two months after the occurrence of paraplegia. In my case it coincided with the onset of the paraplegia of the lower extremities ; but in the arms it was a late and only a partially-developed symptom.

In both cases the sphincters were paralyzed ; but in Gee's this paralysis was observed two months after the paraplegia ; in mine, coincided with it. The patellar reflex was lost early in both.

In both patients excessive perspiration was at one time a prominent symptom ; but in mine it was, for a long time at least, localized in one-half of the face, though extending to both arms.

In both cases, after three months of illness, a tumor developed at the right side of the cervico-dorsal region of the back. Finally, in both cases a diagnosis was made of vertebral caries. But in mine this diagnosis was corrected early in the disease, and long before the appearance of a solid tumor, while in Dr. Gee's case the appearance of the tumor was made to



confirm the erroneous diagnosis, because the tumor was interpreted as a cold abscess. The most striking contrast between the two cases lay in the absence in the arms of Dr. Gee's boy of the irritative symptoms which were so violent in my case; also in the early occurrence of motor paralysis in the upper region, and the fact that this was limited to the right arm. No generalized motor paralysis appeared in the arms in my case, although the increasing rigid contraction of the flexor muscles rendered movement of the arms constantly more difficult.

Again, in Dr. Gee's case, where the tumor occupied, as far as its external position was concerned, precisely the same locality as in my case, there existed ptosis of the right eye and contraction of the right pupil. These symptoms were attributed to a lesion of the inferior ganglion of the sympathetic, in consequence of which the unstriated muscular fibres of Muller in the fascia of the orbit would have been paralyzed.<sup>1</sup>

In my case the pupils were contracted, but there was no ptosis; no transient attacks of blindness occurred which have not been explained.

In my case no autopsy was performed, which could have precisely defined the nature and situation of the tumor of the cervico-dorsal region.

The very similarly-appearing tumor in Dr. Gee's case proved, at the autopsy, to be an osteo-sarcoma, springing from the lower cervical and first three dorsal vertebræ, and connected with the three upper ribs. The spinal cord was reduced in size at the level of the tumor, and softened throughout, an indication of a diffused, central, subacute myelitis.

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### *CASES ILLUSTRATING THE LESS COMMON TYPES OF MUSCULAR DISORDER; COEXISTING PERONEAL AND CARPAL ATROPHY; HEREDITARY ATROPHY; THOMSEN'S DISEASE; PARAMYOTONIA.*

BY G. L. WALTON, M.D., AND C. F. CARTER, M.D.,

Physician and Assistant Physician to the Neurological Department of the Massachusetts General Hospital.

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THERE is, perhaps, no branch of neurology, with the exception of cerebral localization and multiple neuritis, in which modern research has done so much towards the classification and simplification of our ideas as in the class of cases here considered. Perhaps the most important step was the solution

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<sup>1</sup> These fibres, "which are innervated from the sympathetic, act directly on the tarsal cartilages by the connection of these with the fascia. They probably aid to a slight extent in maintaining the upper lid in its normal position. When the cervical sympathetic is paralyzed, the upper lid on that side is a little lower than on the other. Its movements are unimpaired. Ptosis from this cause is distinguished by the presence of other symptoms of paralysis of the sympathetic, such as contraction of the pupil."—*Cramer's Diseases of the Nervous System*, 1888, p. 621.

of the long-disputed problem regarding the pathology, spinal or peripheral, of progressive muscular atrophy, and the establishment of the fact that there are two forms, a distinctly myopathic and a distinctly spinal.

We have one case to report of the purely muscular (hereditary) type, and one of the spinal, the peculiarity of the latter consisting in its unusual onset.

#### PROGRESSIVE MUSCULAR ATROPHY OF SPINAL TYPE WITH BOTH CARPAL AND PERONEAL ONSET.

CASE I.—H. W., aged forty-three; married; a butcher; born in Scotland. Always well up to three and a half years ago, when he first began to have pain in the right thigh and leg. Soon after this he found that he could not raise himself on the right toe. At this time he had occasional attacks of vertigo. The legs seemed to swell at intervals, particularly during a hard day's work. He also suffered severely from "cramps" in the muscles of the legs and abdomen. Says that on bending or stooping the muscles of the abdomen would knot themselves up so that pain was severe, and he could only get relief by rubbing them briskly. About two years ago he first noticed a wasting of the muscles of the legs; previous to this, however, he was unable to lift his toes. This condition has increased until the wasting in the muscles of the legs is extreme (see Fig. 1). About six months ago he first noticed that his hands were affected. There is no pain or tenderness in the arms at present. There is marked atrophy of the muscles of the legs and arms, characteristic of both the carpal and peroneal types of progressive muscular atrophy. A reaction of degeneration is present in the affected muscles.

This case presents the rare combination of a peroneal onset and the comparatively common type of carpal origin supervening with affection of the interossei. The prognosis of this case—untreated, at least—would be, of course, the usual one, terminating with involvement of the centres of respiration and deglutition, the end being reached, probably, within a comparatively few years. Whether its fatal progress will be checked by treatment remains to be seen. The patient, as long as he remained under Dr. Putnam's direction, was being given the benefit of the treatment advised by Gowers, who states that he has known more than one case to come to a stand-still under continued injections of strychnine. He departed too soon for a definite opinion to be formed regarding its efficacy.

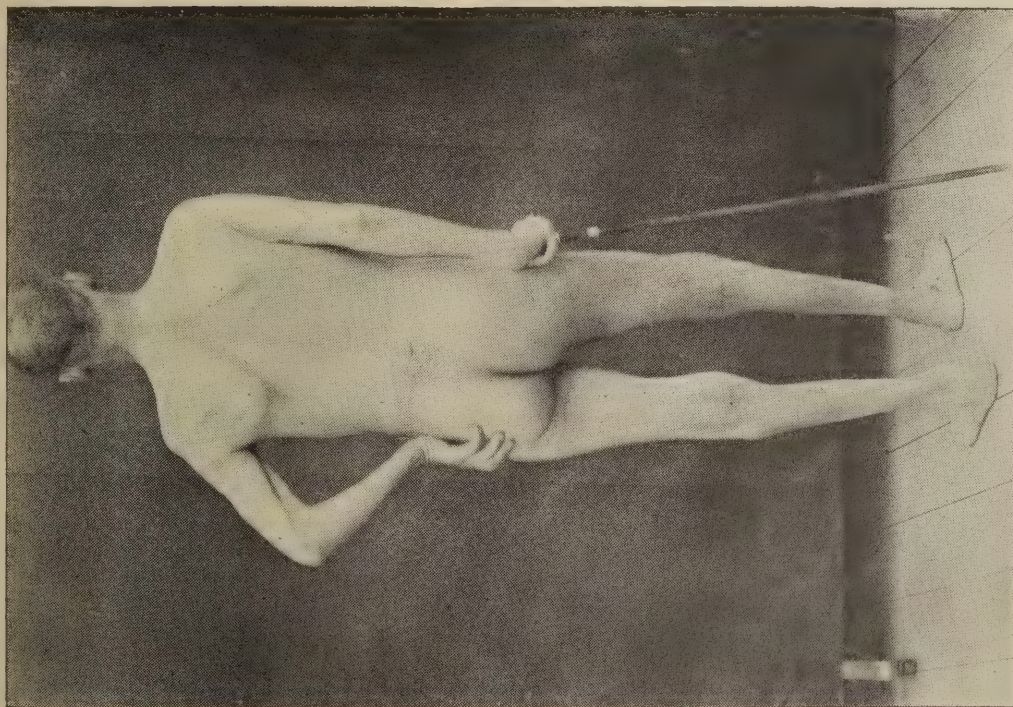
In marked contrast, as regards progress, may be cited a case of

#### MYOPATHIC TYPE OF ATROPHY COMMENCING IN EARLY LIFE AND WITH HEREDITARY HISTORY.

CASE II.—J. M., aged forty-four; married; American. The trouble in his case came on thirty years ago, beginning in the right upper arm, then affecting the left upper thigh, then the left thigh, then the left lower leg, then the right thigh, then the right lower leg. There was no numbness and no pain from the first,—no vomiting, dizziness, or other cerebral symptoms, and no bladder-trouble. His father died, at the age of forty-eight, of an intercurrent affection, having suffered from a trouble similar to his son's, beginning when he was about twenty-five, previous to which he weighed two hundred and five pounds. His picture is shown at the age of forty-four

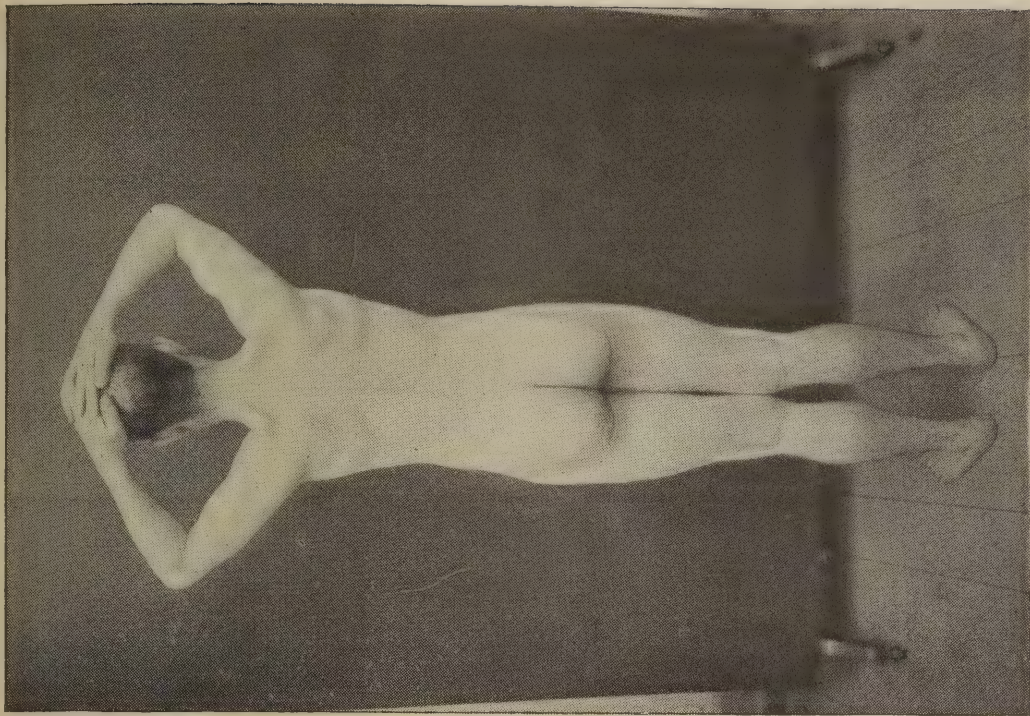


FIG. 1.



CASE I.—EXTREME WASTING OF THE MUSCLES OF THE LEGS FROM  
PROGRESSIVE MUSCULAR ATROPHY OF SPINAL TYPE.

FIG. 5.



CASE III.—MYOTONIA (THOMSEN'S DISEASE).





(see Fig. 2). A great-uncle, on his father's side, had the same trouble, and lived to be sixty. There is no other case in his family, which includes several brothers and sisters.

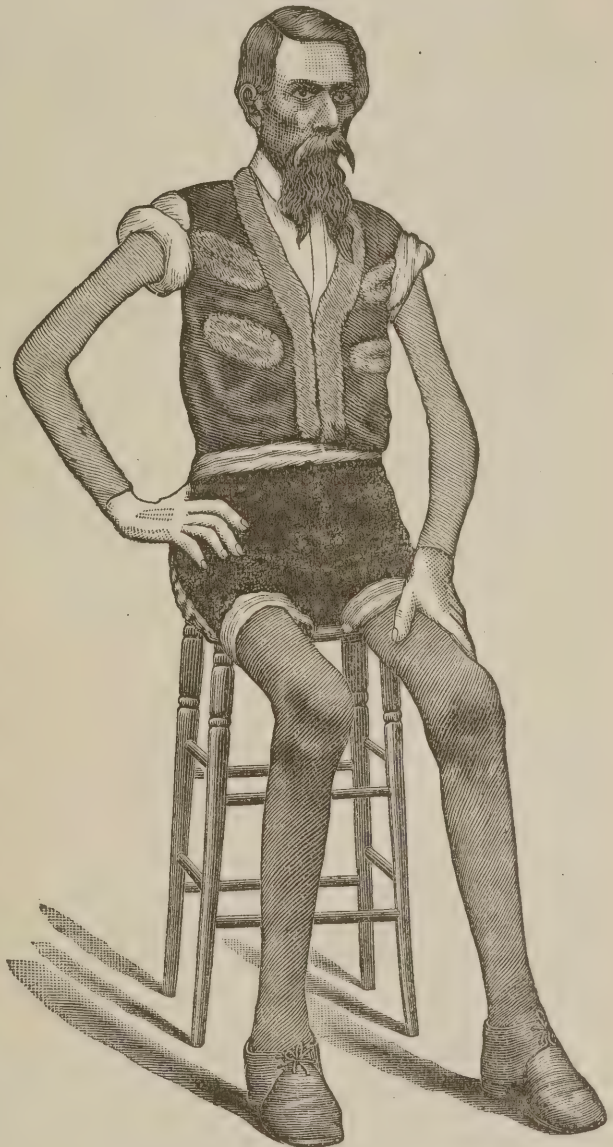
There is now atrophy of the deltoid (exceptional), the biceps to a marked degree, the triceps, the serratus magnus, all the muscles of the thigh, the tibialis anticus, and the peroneal muscles of both legs. The muscles of the back are apparently unaffected. There is a diminution of muscle in the line of the trapezius, though he can bend his head back fairly well (not powerfully). There is marked toe-drop. There is no fibrillary twitching, no degenerative reaction. He cannot rise alone, but when once up he can walk for a long time by locking his knees. The tendon reflexes are wanting. The gastrocnemii are unaffected, also the intrinsic muscles of the hands, as is usual in this type. There is an apparent hypertrophy of the supra- and infra-spinatus on both sides, and rotation backward of the humerus is extremely strong. A lump will be noticed in the picture (Fig. 4), resembling the head of the humerus very much out of place. This is, however, only, apparently, a bunch of connective tissue and fat. The picture of the father of this patient is also given (Fig. 2). The patient was advised no treatment, but was reassured as to his future prospects, being told that he was likely to live to a good old age, and that the muscles of respiration and deglutition were not liable to be affected.

The longevity in some of these cases, as well as the hereditary character, was well illus-

trated by a case already reported by Dr. Walton, at a meeting of the American Neurological Society, of a man of sixty-two, who had had the disease since the age of twenty, whose mother died at eighty-seven, having been affected with the same disease since her thirty-fifth year. In this case all the muscles of the extremities were affected. This patient had traced the disease back through successive generations for more than two hundred and fifty years.

Among the comparative rarities of neurology, of interest rather as pathological curiosities, may be mentioned the myotonia and paramyotonia of Thomsen and Eulenberg respectively; the former being characterized by a rigidity of the muscles, coming on after disuse and disappearing on

FIG. 2.



Father of Case II., dressed as he appeared at the Museum.

exercise; the latter by somewhat similar spasms, coming on during exercise, persisting fifteen to thirty minutes, and again disappearing on continued exercise, unless, perhaps, with a single recurrence.

### MYOTONIA (THOMSEN'S DISEASE).

The case of myotonia we have to report presents no striking peculiarities beyond adding another to the comparatively short list of recorded cases of this curious disease. The suggestion recently offered that this disease may prove after all not a rare one, as it becomes more generally recognized, seems to us hardly likely to be borne out by the facts, for in this event the cases should present themselves in considerable numbers at the neurological clinics of the large hospitals, which is by no means the fact. We have ourselves seen no case during a service of respectively nine and four years at the Massachusetts General Hospital; the present case, a private patient, seen by us both, being the first we have met with, there or elsewhere.

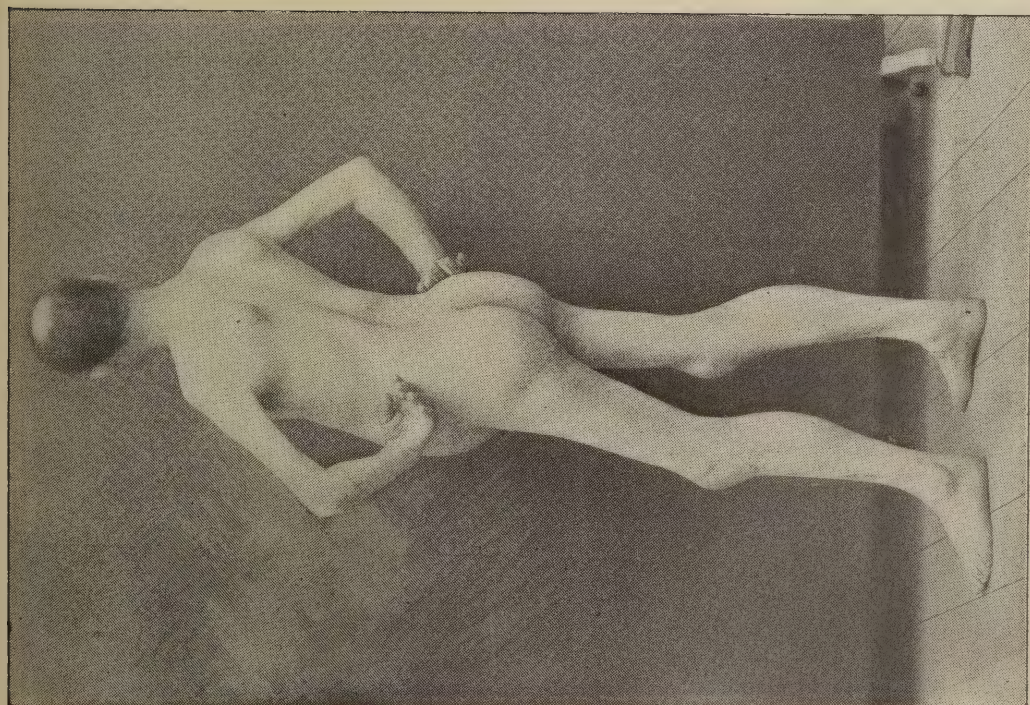
CASE III.—W. C., aged twenty-nine; married; a printer; has suffered since boyhood from the characteristic symptoms of this disease. His mother noticed that he stumbled frequently as a child, and he himself remembers being regarded as peculiarly clumsy and ineffective in his movements, though able to bear continued exertion as well as others. The trouble reached its maximum at the age of fifteen, since which it has been stationary. The trouble consists in inability to use the muscles after a period of inactivity. After sitting still a time, for example, he finds it hard to rise on account of stiffness and seeming weakness; when once upon his feet he is apt to start off slowly and stiffly with, at times, a somewhat waddling gait resembling that of pseudo-muscular hypertrophy. As he continues to walk, however, the movements become more free, and he is able to walk for miles without fatigue. Almost all the muscles of the body are affected, though not in equal degree or with equal constancy. If he tries to raise the arm suddenly he can at first do so only to a certain height, but after a time he can raise it to a vertical line, after which he can repeat the movement more freely, and finally raise and lower it with facility. Deglutition is often impeded at its initiatory stage, and even the eyelids share in the affection, as shown by difficulty in lowering them after he has been looking upward for a time.

The trouble is more marked on some days than on others, and is apparently intensified by excitement and fatigue. While not materially interfering with his work as a practical printer, nor preventing recreation, including out-of-door exercises, it is a source of great discomfort and annoyance. When he becomes stiff at times a moderate push will cause him to fall over.

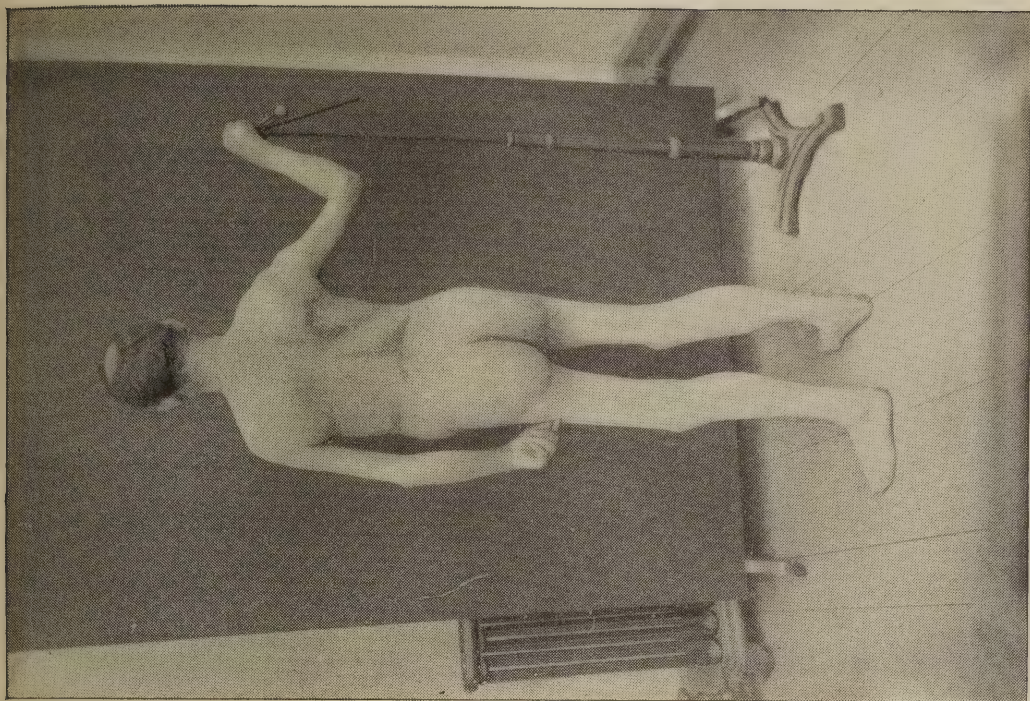
With regard to his family history, there seems to have been no other definite case among his relatives. His paternal grandfather was well up to the age of sixty-eight, when he is said to have had a fit followed by progressive mental deterioration up to the time of his death, a few years later. His paternal grandmother is healthy and vigorous at eighty-two. The children (seven boys and one girl) were all healthy, with the exception of one boy, who was born with partial left hemiplegia, and who now has convulsions.

His maternal grandfather died at sixty, with "softening of the brain"





CASE II.—PROGRESSIVE MUSCULAR ATROPHY OF HEREDITARY TYPE.



CASE II.—PROGRESSIVE MUSCULAR ATROPHY OF HEREDITARY TYPE.







(so-called), with paralysis, having suffered from convulsions since childhood, decreasing in frequency in advanced life. His maternal grandmother is vigorous and healthy, considering her years, at eighty-six.

The issue of this branch (nine girls and one boy) presents nothing neurological beyond convulsions in one girl, beginning at the age of twenty. One child died of acute pulmonary trouble.

The patient's own father is fifty-nine, strong and vigorous, a carpenter, who states that at about the age of eighteen he had a muscular trouble which caused stiffness on rising, but which gradually wore away, and disappeared at about the age of twenty-five. The mother is well and strong.

A sister died at two years and a brother at two days. Nothing was noticed at that age, though the patient's mother remembers that he himself stumbled as early as when he was a year and a half old.

Physical examination reveals, as the photograph shows (see Fig. 5), a stoutly-built man, of moderate stature, but with an unusually good muscular development. In standing, the position resembles somewhat that of pseudo-muscular hypertrophy,—the knees being approximated and the feet well apart. The gait is somewhat rolling, and on first starting off at times very stiff and waddling, at other times less so. Movements of the arms after a period of rest are slow and stiff, becoming normal on continued use. He finds it impossible to get upon the sofa. The leg sometimes stiffens spontaneously, but without the pain of an ordinary cramp. The calves are large and hard, the left measuring fourteen and three-quarters, the right fourteen and one-quarter inches. There is no knee-jerk. He finds it impossible to keep the calf hardened by effort for any time, though at first it becomes quite so. He can squeeze the hand fairly, but the grasp soon weakens. No abnormality is discovered about the irritability of the nerves. The muscles show in general increased mechanical irritability. The deltoid, which shows this disturbance very plainly, remains contracted for some time after the mechanical stimulus is withdrawn. The moderate faradic current applied to this and other muscles produces slow contractions, spreading to other fibres, and persisting after the electrode is removed. The moderate galvanic current produces no peculiarity. The muscles were not examined with the microscope.

The posture and gait on setting out are somewhat suggestive of pseudo-muscular hypertrophy, but this disease is excluded by the strength of the muscles and their perfect action when once under way.

#### PARAMYOTONIA OF EULENBERG.

CASE IV.—W. S., sixty-seven years of age; married. He complains of stiffness which comes on after walking some distance, and if he perseveres palpitation ensues, and he comes to a point where he cannot go any farther. If he tries to go up two flights of stairs or up a hill, this trouble is sure to come on. He has to stop and rest, and if he keeps on after resting, it will wear off,—that is, he can walk up a hill by resting a few times. Again, if he wanted to walk, he could go perhaps two blocks, then he would be obliged to stop and rest, stiffness and generally palpitation coming

on, after the disappearance of which he could go perhaps another block, the same trouble recurring, after which he could go on for a mile or two. He remembers that, as a small boy, if he should climb a tree, one of these attacks of stiffness would ensue, cramp generally coming in the muscles of the abdomen, and lasting for perhaps half an hour. Sometimes it takes half a day for the effects of the spasm to wear off. A younger brother had a similar trouble. He thinks his daughter has the same trouble, although not as severely as himself. He has three other brothers and a son, as well as a sister, who had no trouble. He does not know about his ancestry in this respect. Cold exaggerates the difficulty. Physical examination reveals nothing of note, the patient being a strong, hearty man, of no apparent neuropathic tendency.

Cases III. and IV. are illustrations of a congenital impairment of function of the nervous system, the pathology being unknown, the prognosis good as regards life, but the discomfort great, and the hope of recovery, unfortunately, *nil*.

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## EXOSTOSES OF THE NASAL SEPTUM, AND THEIR TREATMENT BY OPERATIVE PROCEDURES.<sup>1</sup>

BY E. B. GLEASON, M.D.,

Surgeon in charge of the Nose, Throat, and Ear Department of the Northern Dispensary, Philadelphia.

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PROBABLY the most distressing of all the symptoms of nasal catarrh are the result of obstruction of one or both of the nasal fossæ, whether the hinderance to nasal respiration and drainage result from hypertrophy of the turbinated bodies or bony outgrowths from the septum. Usually such bony outgrowths of the septum are situated upon the articulations of the vomer with the superior maxillary bones, and hence are just above the floor of the nose, and nearly opposite the inferior turbinated bodies. They may extend backward as far as the posterior edge of the septum as a bench of bone upon the inner wall of the nasal fossa, or may be of more limited extent. Sometimes they are sharp-pointed or spur-shaped. The apex of an angular deviation of the septum is frequently composed of cartilage or bone much thicker than the surrounding septum, so that hypertrophy of the apex of the angular deviation becomes a greater source of nasal obstruction than the deviation of the septum itself; and, under such circumstances, removal of the greater portion of the hypertrophied angle may secure sufficiently free respiration through the obstructed nasal chamber to render the more serious operation of straightening the septum unnecessary.

Most bony outgrowths from the septum are covered by cartilage and, of course, mucous membrane. The proportion of bone and cartilage in nasal

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<sup>1</sup> Read before the Northern Medical Society, January 26, 1892.



exostoses varies. Some spur-shaped outgrowths situated at the anterior part of the septum, and originating from the triangular cartilage, consist entirely of cartilage, and hence are ecchondroses rather than exostoses. But nearly all outgrowths from the septum, except in childhood, contain more or less bone, which may be exceedingly hard and dense. Even the hypertrophied apex of a triangular deviation of the septum in time becomes ossified, especially in parts nearest the articulation of the triangular cartilage with the bone.

Septal exostoses are invariably the result of local inflammation of the periosteum, resulting, Bosworth seems to think, generally from traumatism; a blow or fall upon the nose in childhood or later life may result in partial luxation of the septum or, at least, inflammation of the periosteum at one of the sutures, which, slowly subsiding, leaves behind permanent hypertrophy or exostosis of that part of the septum. That this is the etiology of the affection, in the majority of instances, I am inclined to believe. On the other hand, however, it has been claimed that while constant pressure upon bone or cartilage will produce atrophy, yet intermittent pressure, such as would be produced by hypertrophy of the erectile tissue of the turbinated bodies swelling into close contact with any part of the septum at each exposure to cold and again retracting, causes local inflammation of the periosteum at the points of contact, and finally exostosis of the septum. The fact that exostoses of the septum are frequently seen in cases of atrophic rhinitis, and that the turbinated bodies are sometimes found grooved and atrophied by the pressure of an exostosis, would seem to indicate that hypertrophic rhinitis was oftener the *effect*, rather than the *cause*, of exostoses.

When an exostosis of sufficient size to cause obstruction to respiration is present in one nasal fossa, and the other is unobstructed, the current of inspired air from both nasal fossæ, meeting in the pharynx, produces a certain amount of suction in the obstructed nasal chamber, in the same manner that, in a cologne atomizer, a current of air forced through one tube across the orifice of another causes suction by which fluid is drawn up through it. Therefore, the mucous membrane behind the obstruction, thus subjected to a kind of dry cupping at each inspiration, becomes swollen and congested, sometimes as far back as the orifice of the Eustachian tube, so that the physiological ventilation of the tympanic cavity is interfered with in such a manner as to produce aural catarrh or even suppuration. More frequently, however, the secretions of the obstructed nasal chamber are simply altered in character and accumulate to a sufficient extent to require the frequent use of the handkerchief and much hawking to remove them. As the result of frequent hawking, chronic pharyngitis results and all the phenomena of post-nasal catarrh. In such cases, not only is the mucous membrane of the pharynx congested and swollen, but the tonsils hypertrophy, and the muscles about the fauces participate in the morbid process, so that their over-use produces a sort of faucial rheumatism or myalgia.

Sometimes there is also present a reflex inflammation of the eye, ear, larynx, or skin of the face, and more or less impairment of the general health, many persons with exostoses of the septum increasing in weight after the obstruction to free nasal respiration is removed. When a nasal exostosis is sharp-edged or spur-shaped, and of sufficient size to indent the mucous membrane of one of the turbinated bodies when it is swollen as the result of a cold, neuralgia, often of the whole side of the face, is not of infrequent occurrence.

Every septal exostosis does not require removal. In atrophic rhinitis, when the nasal mucous membrane and turbinated bodies are atrophied, a septal exostosis serves a good purpose in diminishing the lumen of the nasal fossa and should not be removed. It is not uncommon to find individuals with atrophic catarrh of one nasal fossa while the other is in a comparatively healthy condition. In many such cases a deviated septum has cut short the progress of the disease at such a stage that the narrower nasal chamber finally assumes a condition more resembling health than its fellow. Never remove a septal exostosis when it is causing no harm, for the object of such an operation is not to render the nasal fossæ symmetrical, but to render a diseased nasal chamber capable of performing its physiological functions. When, as is commonly the case, nasal respiration is obstructed by hypertrophies of the turbinated bodies, as well as by an exostosis, the question might arise as to whether it would be best to remove the exostosis, providing satisfactory breathing-space could be obtained by reducing the size of the hypertrophied mucous membrane and submucous tissue upon the turbinated bodies. My own opinion is that the exostosis should invariably be removed if permanent improvement is desired, for I have repeatedly observed that, after hypertrophies of the turbinated bodies have been reduced, either by the galvano-cautery, the snare, or chromic acid, there is a tendency to a reproduction of the original condition, and that such patients generally return to the rhinologist after an interval with a condition of nasal obstruction almost as bad as at first. Under such circumstances, their hypertrophic rhinitis may be "cured" many times by operating on the hypertrophied turbinated bodies, etc., so that the opinion is gradually formed that hypertrophic rhinitis is somewhat like carious teeth,—it requires looking after at intervals, after a cure has been brought about, in order to maintain the nose in a healthy condition. Certainly after the removal of an exostosis there is not so great a tendency to a return to the original condition as after operations on hypertrophies of the turbinated bodies, provided the after-treatment of the operation has been skilfully managed.

Ecchondroses of the cartilaginous septum are easily excised with a knife. Such growths are commonly situated near the course of the septal artery, and if this vessel is wounded, the operation is sometimes followed by severe and persistent hemorrhage. If the blood-vessel be simply nicked, severe hemorrhage may not occur for several hours or days after the operation. The most severe case of post-operative nasal hemorrhage that I ever



saw occurred on the third day after operation, as the result of excising an ecchondrosis the size of a small pea from the anterior part of the septum.

When exostoses are small and consist largely of cartilage, their vitality can sometimes be destroyed by burning a deep furrow with the galvano-cautery upon their upper surface. However, the result of such an operation is uncertain, and may be followed not only by sloughing of the exostosis, but by perforation of the septum as well.

The removal of large exostoses requires the use of either a chisel, saw, or drill. It is well in such cases to reduce by previous treatment active inflammation of the Schneiderian membrane, should it be present, in order to render the reaction after the operation as slight as possible. The patient is prepared for operation by placing in contact with the exostosis pieces of absorbent cotton, saturated with a four-per-cent. solution of cocaine. The pieces of absorbent cotton should be of sufficient size to more than completely cover the exostosis, and it is often best to use two, one for its upper and one for its lower surface. The absorbent cotton should remain in contact with the exostosis for at least fifteen minutes, in order to allow sufficient time to permit the cocaine to anæsthetize the growth to as great a depth as possible; for although, for reasons stated in a previous paper, weak solutions of cocaine produce deeper and more profound anæsthesia than stronger ones, when applied inside the nose, yet they are much slower in their action. If during the course of the operation, the patient complains of severe pain, it may be suspended, and absorbent cotton saturated with a four-per-cent. solution of cocaine applied to the wound; the operation not being resumed until satisfactory local anæsthesia has been obtained. The writer has used cocaine freely in this manner several hundred times during the past four years, and has never seen any untoward constitutional effects.

After the parts have been anæsthetized, the nostril should be separated by means of a speculum, and the size, position, and relation of the exostosis to surrounding structures investigated both with the eye and probe. For operative purposes I greatly prefer a wire speculum that I devised three years ago.<sup>1</sup> (Fig. 1.) It grasps the margin of the nostril very much as an eye-speculum grasps the margin of the eyelids; and dilating the nostril gives a nearly circular opening, which permits the best possible illumination of the field of operation. (Fig. 2.) In most noses it is rather more than

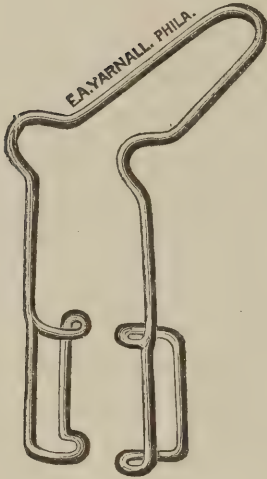
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<sup>1</sup> The idea of devising such a speculum was given me by Dr. L. L. Palmer, of Toronto, who, while visiting Philadelphia, showed me an eye-speculum which he had bent in such a manner as to serve an admirable purpose as a nasal speculum. A year or two before that time, however, Dr. Conrad Berens showed me a somewhat similar device that he had made himself by bending a piece of wire, and which, he stated, answered his purposes as a nasal speculum better than anything he had found in the instrument stores. Dr. Palmer very kindly went with me to Mr. Yarnall, the instrument-maker, but we failed to find any eye-speculum in his stock that would answer our purpose, so that I spent considerable time for some weeks afterwards bending wires, until finally, with Mr. Yarnall's help, the instrument assumed the shape that I now use.

self-retaining, so that it is impossible for a patient to remove it without using his hands. The spring of the instrument may be grasped between the thumb and forefinger of the operator's left hand, the other fingers

FIG. 2.

FIG. 1.



resting on the patient's forehead, thus steadying his head or gently drawing it into such a position as the emergencies of the operation demand.

After the exostosis and the surrounding parts have been anæsthetized, the operator and patient should seat themselves upon piano-stools, the patient with his head resting upon a padded part of the wall in such a position that the interior of his nose can be well illuminated by light reflected from a concave mirror worn upon the operator's forehead or attached to an adjustable gas-bracket. The self-retaining speculum is now inserted; and, if a chisel is to be used, the spring of the speculum should be hooked to a head-band upon the patient's forehead in such a manner as to draw up the tip of the nose into such a position as to secure the best illumination of the field of operation and at the same time leave both hands of the operator free. The edge of the chisel is now thrust as far as possible into the base of the exostosis; and holding the chisel exactly parallel to the septum, the operation is continued by hammering upon its handle with a leaden mallet until the growth is felt to have been severed from its attachment to the septum, or merely retained in position by some shreds of mucous membrane that have escaped the edge of the chisel. These should now be cut with scissors, and the severed mass of bone and cartilage withdrawn from the nasal fossa by means of forceps.

Should it be thought best to remove the exostosis with a nasal saw, it is introduced into the nasal fossa *beneath* the exostosis, with its teeth next the septum, the mucous membrane of which is severed and the teeth of the saw turned upward beneath it, so that they will bite into the base of the exostosis at its junction with the septum. The saw being now held parallel to the septum, the sawing is continued until the growth is completely severed



from its attachment; or, if it be desired to save a sufficient quantity of mucous membrane to cover the wound, the sawing may be discontinued at any stage of the operation, and by a single cut of a narrow bistoury a flap of mucous membrane sufficiently large for this purpose may be detached from the upper surface of the exostosis, and from the slight resistance that it offers will probably escape injury by the teeth of the saw as they emerge from the upper surface of the bony growth.

The removal of an exostosis by a chisel is generally a bloody and brutal procedure. The patient's sensations, produced by hammering on the handle of the chisel, are frequently sufficiently disagreeable to cause syncope. An operator may readily realize for himself how disagreeable these sensations are by holding a piece of wood between his teeth and gently tapping the end of it with a leaden mallet, using a blow of the same force that would be required to drive a chisel through the base of a large exostosis. Two years ago I operated upon several patients who had exostoses of nearly equal size in each nasal fossa, using the chisel on one side of the septum and the saw on the other, for the purpose of ascertaining which operation was the less painful and disagreeable. The opinion of these patients was unanimous in favor of the operation by the saw, and since that time I have abandoned the use of a chisel for the removal of nasal exostoses almost entirely. Nor is a satisfactory result as certain when the operation is performed with a chisel as when done by a saw. The first cut of a chisel is usually followed by a gush of blood, which deluges the nasal fossa and hides everything from view: after which the operation must be continued by the sense of touch and the operator's memory of the position of the growth as regards the septum and the floor of the nose, so that movements of the patient's head are exceedingly prone to interfere with an operator's calculations, with the result that the edge of the chisel pierces the septum and enters the opposite nasal fossa. While I have never had this accident occur in my own operations, I have known it to happen in the practice of a gentleman of great skill in the use of this instrument, and who probably operates with the chisel on nasal exostoses as often as any other practitioner in America. More frequently, however, the chisel emerges from the exostosis after having only severed part of it from the septum; and while it is possible to reapply the edge of the chisel to the exostosis as often as necessary, and continue operating in this manner until a satisfactory result has been obtained, yet, as hemorrhage ordinarily in such cases obscures the parts, it is extremely difficult to remove the whole of the exostosis evenly and smoothly and at the same time avoid wounding the mucous membrane of the parts opposite it. This unfortunate accident is most liable to occur in narrow fossa, where the ecchondrosis is complicated by deviation of the septum towards the obstructed nasal chamber, and is generally followed by granulations from both sides uniting during the healing process in such a manner as to form a sort of bridge across the inferior meatus, which, contracting, draws the septum with it, and produces a deviation of the septum that often causes greater

obstruction of the nasal chamber than that for which the operation was undertaken. Recently a patient was referred to me to be operated upon for obstruction of the right nasal fossa who assured me that the exostosis in that nasal chamber had been chiselled at four separate sittings by a competent specialist, but that that side of his nose was now more obstructed than ever. In view of the fact that the right nasal chamber was, at the time I first saw him, obstructed by a deviated septum and a large exostosis, which extended nearly the entire length of the septum, and was united at two places by "bridges" with the inferior turbinated body in such a manner as to prevent the passage through the inferior meatus of any but the finest probe, even after the use of cocaine, it was difficult to understand how his repeated chisellings had accomplished anything but harm. At the second visit of my patient I removed, by means of the saw, a large mass of bone and cartilage, which at once secured satisfactory breathing-space, and this was subsequently improved somewhat, as frequently happens in such cases, by the deflected septum being drawn into a more symmetrical position by the contraction of the scar of the wound that had been made.

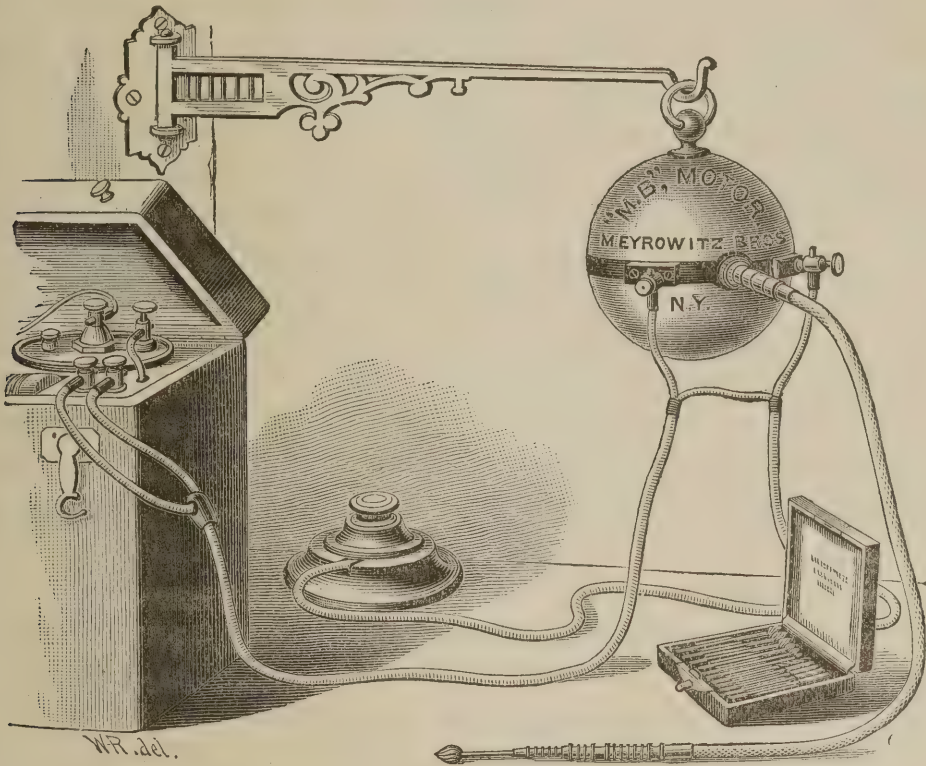
For such operations I have used a straight saw, similar to that recommended by Bosworth, except that it has no "nasal angle,"—a feature the value of which I am unable to appreciate. Saws with fine teeth, the blades about three inches long, and made as thin and narrow as is consistent with strength, have given the best results; but when an exostosis is voluminous, and consists largely of very hard bone, they cut through it very slowly, and the operation is necessarily tedious, and may necessitate one or more periods of rest before it is completed. This is the great disadvantage of using a saw for such operations. The chisel does quicker work.

Of thirteen operations that I have performed during the past three months of October, November, and December, 1891, four have been done with a saw and nine with trephine-shaped drills, the motive power of which was supplied through a flexible arm-piece, such as is used by dentists, by a small electro-motor, suspended from a movable bracket attached to the wall, at one side of my patient's head. (Fig. 3.) I confess that, previous to employing trephines and burs for the removal of nasal exostoses, I had been prejudiced against their use for such purposes by the statements of patients upon whom they had been used before coming under my care; nor do I now think that the older forms of these instruments, operated by means of a dental engine, are well adapted for use inside the nose. Those with which I was at first supplied were rendered so clumsy by the shield, designed to protect the parts about the field of operation from injury, that the trephine and shield could not be introduced more than one-half inch within the nostril without hiding everything from view; while the instrument was too short to reach from the anterior to the posterior border of the septum. (Fig. 4.) There was, moreover, so much rattling of the trephine inside the shield as to interfere materially with the



delicacy of the sense of touch through it. These faults were, however, soon overcome by lengthening the shanks of trephines and burs, and a new shield

FIG. 3.



was made for them by Charles Lentz & Sons, from a model of sheet-lead which I furnished. (Fig. 5.) So modified, the trephine seems to possess all

the advantages of both chisel and saw for the removal of bony growths from the septum, and none of the disadvantages of either instrument. With it large exostoses may be removed as quickly as with a chisel, without producing as great pain and shock, and hemorrhage does not hide the parts from view during the operation; so that it is possible to remove the entire exostosis and leave a wound as smooth and perfect as that resulting from the use of the saw. The modified shield is constructed of thin metal, and made to hug the shafts of the trephines and drills as closely as possible, so that that part of the instrument is so slender that it does not obscure the view when it is inside the nose; while,

FIG. 4.

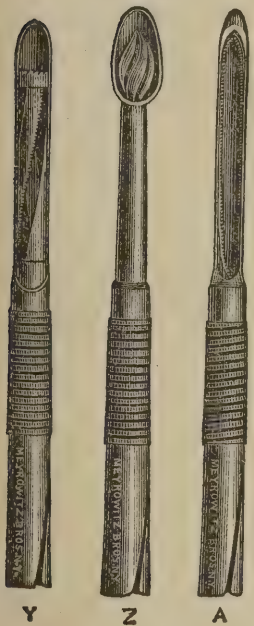


FIG. 5.



on account of the long bearing of the drill inside of the shield, it revolves so smoothly that the delicacy of the sense of touch is not impaired in the least, and it is entirely possible to use the end of the shield as a probe

to test the hardness of any projection from the septum before cutting it with the trephine or bur. It is also possible to preserve flaps of mucous membrane from the lower and upper surfaces of an exostosis sufficiently large to cover the wound, should it be thought desirable to do so.

The operation with the drill is performed in the following manner: A trephine, sufficiently large to remove at once the major portion of the exostosis, is selected, and with its shield is adjusted to the arm-piece of the electric motor in such a manner that the shield will protect all parts of the nose from injury except those to be cut away. The teeth of the trephine are now pressed into the anterior part of the growth, and as the instrument is pushed forward a piece of bone is cut from the exostosis, which enters the cavity of the trephine, where a knife set at an angle cuts it into pieces sufficiently small to pass through a fenestra made for this purpose. Should a sufficient amount of the growth not be removed by the first passage of the trephine through the nasal fossa, the trephine may be reapplied as often as may be necessary to remove the entire exostosis and leave a smooth, flat surface like that made by a saw.

The after-treatment of such operations consists in keeping the wound clean by means of a sedative antiseptic wash, which the patient should sniff up through his nose three or four times a day. Ordinarily, the healing process is complete by the end of the first or second week. When, however, the wound is jagged, instead of being flat and smooth, or when it is cup-shaped, as is usually the case in operations done with a gouge-shaped chisel, healing takes place more slowly, and sometimes exuberant granulations appear upon the bone, which may attain a considerable size and finally, ossifying, partially reproduce the exostosis. Should such granulations show themselves, they should, while still soft, be cut down to the level of the wound with a pair of scissors, and the parts touched with a strong solution of nitrate of silver to prevent their recurrence.

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*ON THE TREATMENT OF DISEASE BY THE INJECTION  
OF LIQUIDS DRAWN FROM THE VARIOUS ORGANS  
AND TISSUES OF THE BODY.*

BY THOMAS LINN, M.D.,

Nice, France.

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DR. CONSTANTIN PAUL, physician to the Lariboisière Hospital in Paris, recently read a paper before the Académie de Médecine on "The Treatment of Neurasthenia by Nervous Transfusion." This method consists in the hypodermic injection of a ten-per-cent. solution of the gray substance of sheep's brain. These solutions are filtered and sterilized by



carbonic acid gas, under pressure, similar to the gas-tubes used by dentists (nitrous oxide gas). Dr. Paul injects five cubic centimetres of the solution, which is always well tolerated. In over two hundred cases it did not cause any local trouble or inflammation, nor abscesses. The first effect produced was a feeling of renewed strength and well-being. The fact that the patients were actually much stronger than they were before getting the injections was proved by the greater amount of work and exercise they took afterwards. The vertebral pains and spinal hyperæsthesia disappeared after a few days. The neurasthenic headache and insomnia, together with the functional brain disorders and sexual impotence, were greatly improved, while they secured a good appetite and increased in weight. M. D'Arsonval, who had charge of Professor Brown-Séquard's laboratory, and lectured in his place at the *College de France*, in Paris, while Dr. Brown-Séquard was in Nice last winter, followed up Dr. C. Paul's communication to the Academy by stating that the professor had not only recommended the injection of testicular fluids but had also said that the juices of other organs, such as the liver, lungs, and kidneys, might be employed.

These experiments raise once more the whole question of the injection of liquids drawn from the body for the cure of disease. The eminent physiologist and physician, Professor C. E. Brown-Séquard, said, "All glands, whether they have excretory ducts or not, give to the blood useful principles, the absence of which is felt when the glands are extirpated or destroyed by illness."

It is evident that some great truth lies behind these words, and that all the tissues of the body give something special to the circulating torrent. If this can be defined, there is a new therapeutical method, or a number of them, based on these facts, to be given to the world. If all the tissues, glands, and other organs have an internal secretion which they give to the blood and which has a favorable influence on normal health, keeping the organism in a proper equilibrium, and if morbid manifestations depend on a want of these principles, then it is but natural to conclude that the injection of such liquids (taken from a healthy animal) would supply the want caused by disease. So far it has not been found possible to use all these fluids, owing to their poisonous effect upon the human subject, but M. D'Arsonval has found they can be sterilized by a simple method, as follows: A healthy animal is chosen (a guinea-pig by preference), and the tissue or gland taken from it and cut into very small pieces. It is then macerated for twenty-four hours in three times its weight of glycerin (that has been boiled). Then three times the volume of boiled water is added, when it is all put in a chamois-leather filter and drawn off by aspiration, submitted to a temperature of 40° C., and then sterilized by carbonic acid gas that is under pressure. (This liquefied gas is kept in iron tubes in the same way as the dentists keep nitrous oxide gas.)

The new therapeutical method being one of injection of *all the tissues and glands of the body*, it would seem to follow that in leucocythæmia we should

use the fluid of the lymphatic glands, in anæmia, that of the spleen, bone-marrow, etc., and in muscular weakness, that from the muscular tissues. The nervous diseases must be treated by the fluid extracted from the nerves and the great central organ, the brain, as well as perhaps the testicular fluids; in diabetes, the pancreatic fluid; while in stomach complaints we shall improve on acids and pepsins. In Addison's disease the fluid of the suprarenal capsules should be employed, and in myxœdema the thyroid gland, and so on. This is no fancy picture, but a truth that will be demonstrated before many years.

Dr. Brown-Séquard is about to publish a large book, giving the results of the past few years' experiments upon the cure of locomotor ataxia, nervous diseases, and the *weakness due to old age*.

In regard to this last, the writer had the pleasure of meeting Professor Brown-Séquard in 1877, when he was giving a course of lectures in Bellevue Hospital Medical College, New York, and Dr. Brown-Séquard was then a small, wiry, weak-looking old man. Since we have seen him often in Paris (from 1880 to 1885), and off and on up to the present time, when we saw him in Nice, looking quite as *well as he did in 1877*, having all the old vivacity of mind and body. This notwithstanding an attack of the prevalent influenza in Europe this winter (1892). In 1885, in Paris, he looked very weak and old, nothing like so well as in New York. The reason of the change is owing to the use of his testicular fluids per hypodermic injection, which have added apparently the strength of fifteen years to his appearance. Professor Brown-Séquard has now over two hundred guinea-pigs in his garden for experimentation, and a number of physicians are trying his method constantly. He is seventy-five years of age this April (1892).



# CLINICAL LECTURES.

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## *THE TREATMENT OF EPIDEMIC INFLUENZA.*

CLINICAL LECTURE DELIVERED AT THE HÔPITAL BICHAT.

BY HENRI HUCHARD, M.D.,

Paris, France.

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GENTLEMEN,—Let us study for a moment the epidemic through which we have just been passing. It has been called "*Infection Grippale*." Let us consider this malady attentively and see what its characteristics are, how it affects the whole organism, and what are the therapeutic measures best calculated to meet the indications which arise.

The best evidence of wisdom in a good physician, says the well-known writer Borsieri, consists in watching the tendency of a prevailing disease and finding out what its dangers are, how they can be combated, and what hope there is of curing it.

Without the aid of microbiology clinical medicine has at once shown the infectious character of the malady, and it has also given warning that la grippe is above all a general constitutional malady, and not by any means a simple bronchitis or a cold with general symptoms. Clinical medicine has proved that this disease attacks all the different parts of the organism, as you will see from the following observations: The spleen will be found enlarged (as it is in all the infectious diseases). The kidneys are sometimes similarly affected; the urine even containing some albumen; and it is not rare to find a post-grippal nephritis, like that which we see in scarlet fever. The heart itself presents some of the symptoms that I have called your attention to under the name of "cardiac grippe," consisting of fainting spells, angina-like pains, lipothymia, and even acute myocarditis.

Just as in typhoid fever, the grippe is characterized by a considerable fall of the arterial tension, which may give rise to alarming symptoms. Are there any alterations in the blood itself? Most assuredly there are. Burlureaux says, "The infectious nature of the grippe is shown by a destructive action on the blood-globules just like that seen in malaria."

It is this, without doubt, that causes the anæmia that follows the disease itself, combined, though, with the profound impression that it creates on the

nervous system. This latter is the cause of the asthenia that is so difficult to treat after an attack of influenza.

During the serious epidemic of 1889–1890, several pathogenic microbes were found. The streptococcus pyogenes was so often found that we thought for a moment that it was peculiar to the grippe. The staphylococcus pyogenes aureus, the pneumococcus, and the pneumo-bacillus were also found, but all these are the infectious agents of a secondary order seen in the various complications, and they certainly do not cause this disease, as they cannot be found at first. At the present moment no less than three German savants are disputing the honor of having found the influenza microbe. They struggle for it as if it was a matter of great importance. But all this does not make any change in our therapeutics, any more than the discovery of the Koch bacillus did. The deaths by phthisis have in no way diminished by the knowledge of the form of the micro-organism found in the disease. In fact, we may say that when Koch undertook to use his laboratory style of therapeutics the consumptives died faster than ever. This is so true that we are justified in asking if microbicide medication is not wrong, and if we should not return to the former idea of sterilization and modification of the organism itself. This proves to us once more that medical knowledge does not constitute an exact science, and we have continually to resort to experimentation. The words of Hufeland are still true: "All systems perish, but art is eternal." The ancient writers seem to have understood the infectious nature of influenza, for they called it pestilential or malignant disease, which, they said, in 1580 filled all Europe with sadness and mourning. The enumeration that I have given you of the principal clinical characters of la grippe will show that it retains its infectious nature. It has three principal characters that we must study :

1. Its action on the nervous system.
2. Its action on the respiratory system ; and
3. Its tendency to provoke suppuration.

As to the first both patients and physicians have observed the loss of strength with profound adynamia that precedes, or more often follows, an attack of influenza,—sometimes lasting for months. It is one of the most frequently-observed phenomena of the action of this disease. This asthenic action may show itself alone, during an epidemic, without any fever being present. It is what we call "the grippal state," and it is characterized by great moral, intellectual, and physical depression. This nervous form of the disease will show itself by pain of a neuralgic character. At times it takes the form of rheumatic pains or even of pseudo-meningitis. We have also seen ocular paralysis as well as some other forms of paralysis. In the same order of facts we can speak of broncho-plegia or, as Graves calls it, a real paralysis of the lungs. This parietic state of the bronchial tubes complicates very often the thoracic affections, which may seem insignificant at first, and yet more fatal. And this broncho-



pulmonary paralysis may be primary, and not secondary, as is usual, and in that case it would constitute the principal and only danger. We have seen patients succumb with a real asphyxia in such cases, and the dyspnoea was in no sense in accord with the stethoscopic signs, which were often quite slight.

Beside this symptom let us place the cardioplegia seen in influenza. We have seen patients who died from a paralysis of the heart. It must have been that the medulla oblongata was profoundly affected, and that the pneumogastrics were benumbed as though they were cut, which would explain the production of pulmonary congestion persisting for weeks and terminating by death.

As to its action on the respiratory organs, it has been known so long and been so well described in books that we need not dwell upon it. From the nose to the lungs themselves, passing by the larynx and bronchial tubes, the catarrhal inflammations are so common that you all have seen them. It is understood also that the grippal form of pneumonia is the same as the ordinary form, of which Villard says that "*grippe don't like pneumonia, but pneumonia likes grippe.*" That is to say, that bacteriology proclaims that they are alike as to the microbe, but clinical medicine is sure that certain peculiar qualities attach themselves to the grippal form; for instance, the evolution is not the same, the attack proceeds by successive increase and decrease of the symptoms and not by the usual phenomena of pneumonia. The stitch in the side and the shivering fit, even the rusty sputa, may not be seen, while the dyspnoea is more intense, owing to the broncho-plegia we have already spoken of. The frequent suppuration of the lungs we see in influenza is not usual in pneumonia. Graves was right in saying that "*the poison that causes grippe acts on the nervous system, and particularly on that of the lungs.*"

As to its suppurative tendencies: A simple list of these will prove that they exist. Ozanam spoke of suppurative otitis and parotitis and suppurative pneumonia as being constantly seen. Menétrier gives five cases. In the last few days you have been shown three cases of suppurative pericarditis. The cases of pleurisy of this nature are common; fetid bronchitis and suppurating tonsillitis are seen constantly.

Therapeutic measures: The study of this disease shows that the nervous system is profoundly affected, which should be kept constantly in mind, for this system is the great regulator of the pathological actions, just as it is the regulator of the physiological actions. It is by the nervous system that the grippe acts, waking up some weak point already diseased, and it is just this system that makes the convalescence so long and difficult to treat. I am quite sure that the local manifestations of influenza are entirely due to the action on the nervous system. I therefore think that you should keep this fact constantly in mind for its treatment. This is a point that all the microbiology in the world won't teach you and clinical medicine will. In the simple form of the grippe I give the following pills:

R Quinin. hydrobromat.,  
 Sodii benzoat.,  
 Caffeine, āā gr. xxx.  
 M. et fiat pil. no. thirty.  
 Sig.—One pill three times daily.

When the patient is taken with pneumonia we are obliged to do as others do,—that is, treat the symptoms, as we do not know what specific medicine will destroy the pneumococcus. The underlying weakness and depression is the real enemy to fight against in la grippe, and the best remedy we have is strychnine,—

R Strychnine sulph., gr. ss;  
 Aquæ destillat., ℥v.—M.  
 Sig.—Give three to five teaspoonfuls per day.

In very serious cases we give hypodermic injections of,—

R Strychnine sulph., gr.  $\frac{1}{4}$ ;  
 Aquæ destillat., ℥jss.—M.  
 Sig.—Inject, twice or three times daily, a half-syringeful of the above.

As to pneumonia: We use three to six injections per day of caffeine, two to three of ether, and two of a solution of camphor, as follows:

R Camphor, ℥iiss;  
 Olive oil (sterilized), ℥iii.—M.  
 Sig.—Use from two to four hypodermic injections per day (a syringeful at each injection.)

Do not forget, what we have so often said, "*the disease is in the lungs, but the danger is in the heart.*" You have seen in the wards a patient with pneumonia who got well after we gave him (when very low) one-sixtieth of a grain of crystallized digitalin. And in grippal pneumonia you must also keep in mind that the danger is in the nervous system as well.

Besides all this: If the fever is high, use hydrobromate of quinine, in eight- to sixteen-grain doses. Finally, intestinal antiseptics are often required, for which you may prescribe naphthol, bétol, salol, and bismuth salicylate, or benzonaphthol. Add to all this some good form of alcohol and milk, and don't abuse the administration of antipyrin, which "*closes the kidneys.*" For the same reason do not put blisters over the kidneys. You see, from the treatment that I propose, that you should not use depressing expectorants, which are often more dangerous than useful in a malady that is characterized by profound adynamia. Never consider that one organ is attacked in influenza, for the whole organism may be under the influence of it, but the most important thing I have to say is, *sustain the nervous system and use nerve tonics in influenza, but do not over-excite the nervous system.*



*TWO CASES OF REMOVAL OF THE SEMILUNAR GANGLION THROUGH THE FLOOR OF THE SKULL FOR FACIAL NEURALGIA.*

CLINICAL LECTURE DELIVERED AT MERCY HOSPITAL, CHICAGO.

BY EDMUND ANDREWS, M.D., LL.D.,

Professor of Surgery in the Chicago Medical College and Senior Surgeon of Mercy Hospital.

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GENTLEMEN,—I will show you to-day one of the newest operations and one of the most difficult in the whole range of surgery. It consists in the removal from the interior of the skull of the Gasserian ganglion for the cure of trigeminal neuralgia. The neuralgias of the fifth pair of nerves sometimes continue five, ten, or even twenty years; in fact, there is no known limit to their duration. In a portion of the cases the pain is of atrocious severity, so that the patients look to suicide as a relief from their sufferings. Although many mild cases are cured by medical treatment, there remain a few which can be helped only by surgical measures. Fifty years ago writers on surgery seemed to have the idea that the disease lay at or near the periphery of the nerve, and nerve-sections were accordingly practised near the surface. The fact that these measures rarely accomplish anything more than a temporary relief led French investigators to think that, since the branches of the fifth pair of nerves reach their destination mainly by travelling through bony canals, probably the source of irritation lay within those canals. Hence they instituted an effort to take out sections of nerves on the proximal side of these channels, so that the inferior dental nerve was excised between the skull and its entrance into the lower jaw, and the supraorbital and infraorbital nerves were resected within the orbit on the proximal side of their respective foramina. This proved to be somewhat better than the previous operations, and appeared at first to be very encouraging. But further observations showed that, although some were permanently cured, a large majority relapsed within a period of from six to eighteen months. About this time Nüssbaum introduced the process of nerve-stretching, and much was hoped from the application of it to the fifth pair. However, it turned out to be very little, if any, better than the nerve-sections, and the majority of the worst cases of the disease remained uncured, at last, upon our hands. Three years ago I showed that when the neuralgia returned after neurectomy of the inferior maxillary nerve near its exit from the skull, the relief can be repeated several times on the same nerve, even when no more of the stump could be found. I accomplished this by cutting down to the seat of the operation, seizing the internal cicatrix, separating it from its attachment to the jaw, and, with a strong

pair of forceps, slowly twisting it out, thus making a powerful nerve-stretching by means of the attachment of the cicatrix to the stump of the nerve. This was a singular fact, and I made use of it in a number of cases with success. Still, I did not believe that cures effected by this method would ordinarily be permanent. I therefore set about investigations upon the cadaver to see if it would be possible to remove the semilunar ganglion from within the skull by an operation especially devised for that purpose. The facts encouraging me to make this investigation are these: Facial neuralgia is, in the majority of instances, of peripheral origin. In a large portion of them it commences as a peripheral neuritis generated by the irritation of a decayed tooth. The symptoms are such as lead to the conclusion that in only a few instances does the progress of the disease reach to the brain itself, since there are usually no cerebral symptoms. That portion of the fifth nerve which lies between the medulla oblongata and the semilunar ganglion is very different in structure and appearance from the branches given off from the ganglion to be distributed to the peripheral parts. Without taking up the time necessary to go fully into this part of the investigation, suffice it to say that it seems probable that in the great majority of cases progressive neuritis reaches the semilunar ganglion, but rarely goes beyond it, just as in the neuritis of an intercostal nerve, which causes herpes zoster, the inflammation reaches the ganglion along the posterior root, but rarely goes beyond to the spinal cord. In short, it seems as if the ganglion possessed the power of resisting the progress of the neuritis towards the nerve-centres; hence, if the semilunar ganglion itself can be extirpated, there will be good hope that the cause of the pain will be removed and a final cure be effected. I had been engaged some eighteen months upon this investigation when I learned that Professor Rose, of London, had also turned his thoughts in the same direction, and had actually removed the ganglion in two cases before I had myself done the operation upon any living patient; so he is fairly entitled to priority in this matter so far as the application of the plan to the living patient is concerned.

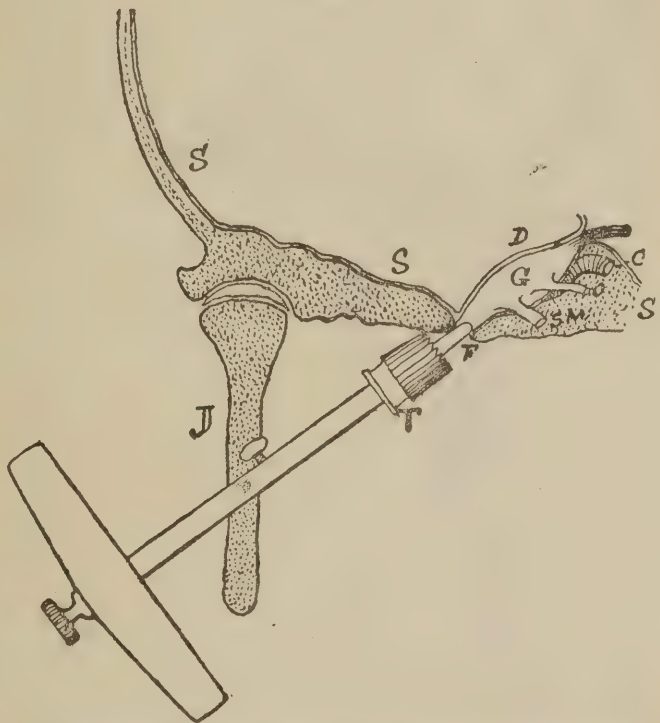
My experiments upon the cadaver showed me that there are about six methods in which it is possible to remove the ganglion. The first operation of Rose was modified by the demands of the patient, who insisted that he should remove the superior maxilla, where he felt the principal pain. Professor Rose, in this instance, therefore, consented to remove that bone. This uncovered the fossa behind it, thus gaining an easy access to the foramen ovale, from which the inferior maxillary nerve emerges. Placing the centre-pin of a trephine in the foramen, he took out a half-inch disk surrounding the orifice; then, opening the capsule of the ganglion, he divided the superior maxillary branch, and, with some difficulty, picked out and removed almost all of the ganglion. This was twenty-two months ago, and the patient still remains free from pain. In his second and third operations, Rose avoided the removal of the superior maxillary



bone by uncovering the parts from the side of the face, as is shown in Fig. 4. In his fourth and fifth operations, he proceeded in essentially the same way, but on reaching the floor of the cranium he selected the place for the application of the trephine, which I had previously urged before the American Medical Association,—that is, not directly upon the foramen ovale, but just external to it, as shown in Figs. 2 and 3. In a letter to me, Professor Rose gives the opinion that the new place of opening the skull is preferable to the former one.

The anatomy of the parts is briefly this: The fifth nerve emerges from the medulla oblongata in a flat, soft trunk, which is easily torn, and is very different in structure from the divisions issuing from the distal side of the ganglion to supply the facial organs. Passing forward over the crest of the petrous portion of the temporal bone, it enters a small opening in the dura mater, and expands into the semilunar ganglion on the anterior slope of the petrous portion of the temporal bone. The dura mater here divides into two layers, enclosing the ganglion in a sort of capsule; the upper layer is thick and strong, and the ganglion is firmly adherent to it. The lower layer, next to the bone, is very thin and delicate, and the ganglion easily separates from it. The ophthalmic, with the superior and inferior maxillary trunks, is given off from the anterior edge of the ganglion to proceed to the face. The largest of these divisions is the inferior maxillary, which emerges from the skull through the foramen ovale as a somewhat thick cord, very firmly invested with a prolongation of the dura mater, so that it is strong and will withstand a good deal of tension without breaking. Soon after leaving the foramen it divides into two branches,—the inferior dental, which enters the canal in the inferior maxilla and supplies the teeth, lower lip, etc., and the gustatory nerve, running to the side of the tongue. The direction of the parts is such that a probe carried along the trunk of the inferior dental nerve, from its point of entrance into the ramus of the jaw, upward and inward to the foramen ovale, passes

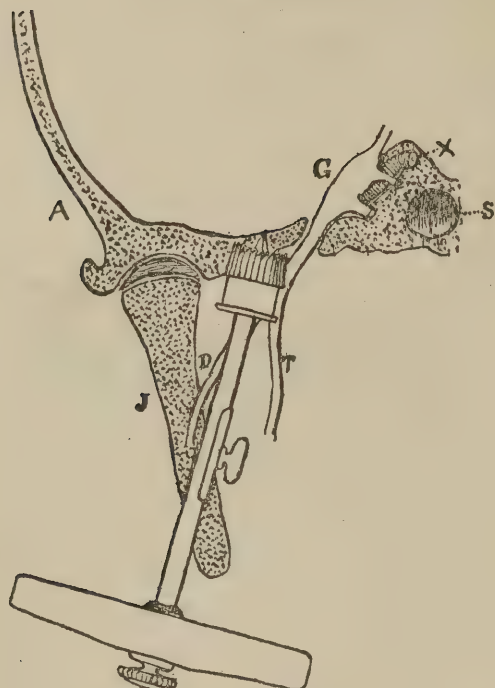
FIG. 1.



Rose's first operation, with the long, blunt centre-pin of the trephine inserted into the foramen ovale. *S, S, S*, the floor and side of the cranium; *G*, the Gasserian ganglion; *F*, the foramen ovale; *T*, the trephine; *D*, the dura mater; *C*, the carotid artery; *J*, the lower jaw.

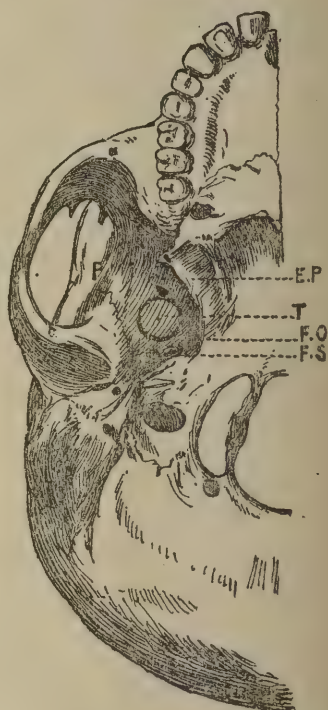
through the foramen straight onward into the centre of the semilunar ganglion. Fig. 1 shows this relation, with the trephine applied with its centre-pin in the foramen, according to Rose's first and second operations. Fig. 2 shows the same general relations with the trephine applied to the surface, just external to the foramen ovale, and advocated by me as the best point before Professor Rose adopted it, though the latter's selection of it was the result of his own investigations without communication with me. Fig. 3 shows the relation of the parts at the base of the skull; *F O* is

FIG. 2.



*A*, the cranium; *G*, the ganglion; *X*, the carotid artery; *S*, the sphenoidal sinus; *D*, the dental branch of the nerve; *T*, the gustatory branch, natural size.

FIG. 3.



Shows the relation of the parts at the base of the skull. For description see text.

the foramen ovale, which gives exit to the inferior maxillary nerve; *F S* is the foramen spinosum, through which the middle meningeal artery enters the skull; *E P* is the external pterygoid plate, whose free external edge runs directly to the anterior extremity of the foramen ovale, but is sometimes prolonged by a ridge on the inner side, and sometimes on the outer side, but always close to it; hence it is an important landmark for finding the foramen; *P* is the pterygoid ridge, sometimes also an important landmark. The black circle on the drawing, just external to the foramen ovale, shows the place for applying the trephine.

I operated on my first case at this clinic some months ago. The patient was an old lady about sixty-two years of age, who had been suffering very violent facial neuralgia for a period of five or six years, and had exhausted all the resources of medical art in endeavoring to alleviate it. The pain came on in frequent paroxysms, which were excited by the slightest touch on the side of the face and by every effort at swallowing. So violent was this

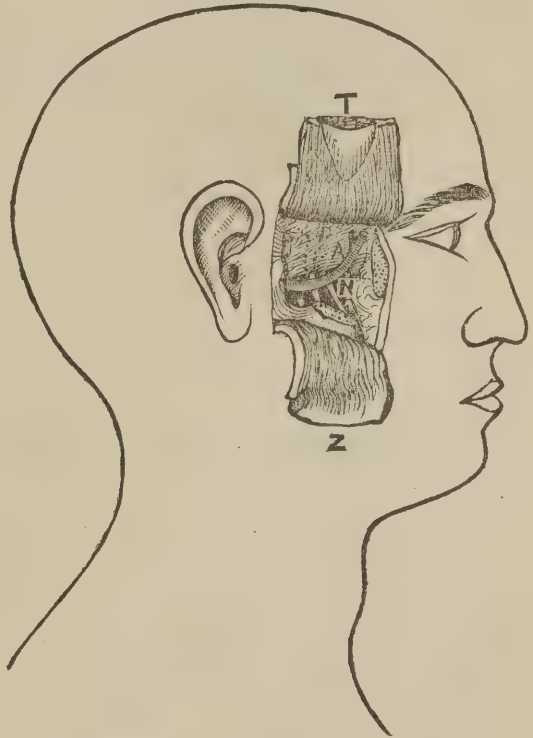


pain that she was unwilling to eat any solid food, and for a long time had confined herself to liquid nutrition because it could be swallowed with less pain. She had gradually grown weak under this imperfect nutrition, and for the last five months had been confined to her bed, and evidently was gradually sinking from inanition. I argued, therefore, that it was a suitable case in which to try the new method. I uncovered the deeper parts by a plan similar to that adopted by Rose in his second case, which was as follows :

Having shaved the temple and disinfected the surface, I made a perpendicular incision across each end of the zygomatic arch and connected them like the letter H with a cross incision running along the arch itself. I then sawed off the anterior and posterior extremities of the arch, separating the bone from the temporal fascia, and turned it downward and backward upon the jaw, carrying the masseter muscle with it. This uncovered some connective tissue and the temporal muscle. I next sawed off the coronoid process of the lower jaw, turning it upward, and carrying with it the attached temporal muscle against the side of the head. This uncovered a quantity of loose connective tissue lying inside of the temporal muscle in which runs the internal maxillary artery, which I ligated. Picking out and pressing aside the loose fat, I uncovered the external pterygoid muscle, which arises from the external pterygoid plate and adjacent part of the base of the skull, and runs horizontally backward to be inserted into the neck of the jaw.

Dividing this muscle near its insertion, it was drawn upward, and the dental nerve found emerging from beneath it, and a little farther in was the gustatory nerve. These two trunks were seized, cut off, and the stumps held in the grasp of a pair of forceps as a guide to the foramen ovale. (Fig. 5.) At the same time I passed my finger along the posterior free border of the external pterygoid plate upward to the skull, where the foramen exists. Having identified its locality and suppressed the hemorrhage, which was pretty free, I then deviated from the plan at that time practised by Professor Rose. Instead of introducing the centre-pin of the trephine into the

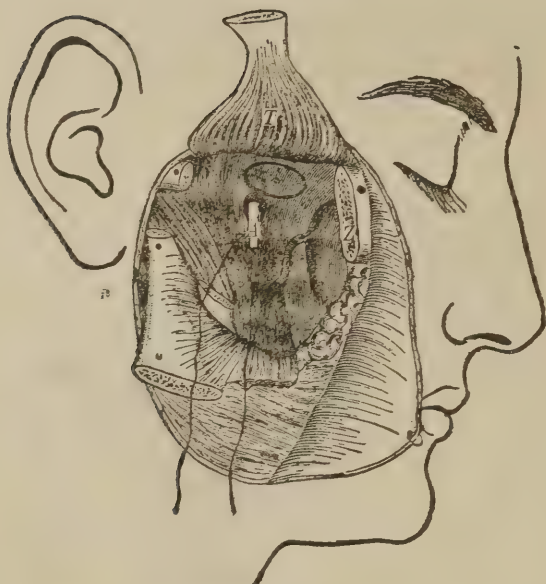
FIG. 4.



Rose's second operation. Z, lower flap, containing zygomatic arch; T, upper flap, carrying up the coronoid process; P, external pterygoid muscle; A, superior maxillary artery; N, the gustatory and inferior dental nerves. Their course behind the pterygoid muscles is intimated by dotted lines. The foramen ovale is just back of P.

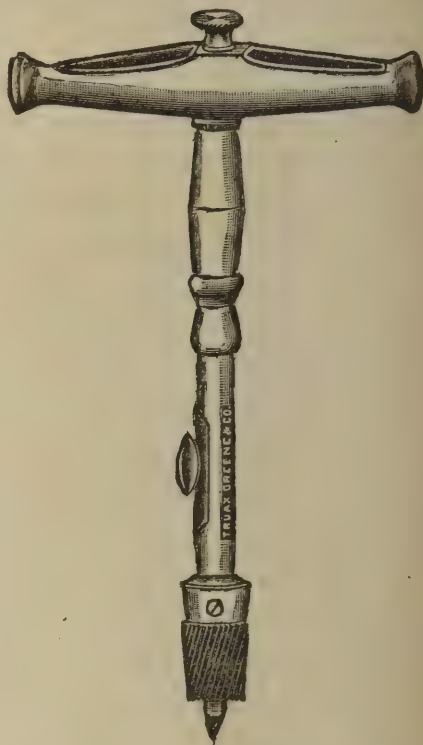
foramen ovale, I scraped the muscular attachments from the level under-surface of the bone external to the foramen, there being at that place no important organs to be wounded. I then placed a five-eighths of an inch trephine on this level surface and took out a button of bone just external to the foramen ovale (see Figs. 2 and 3: the trephine has a long shaft as in Fig. 6);

FIG. 5.



Rose's latest operation. T, temporal muscle; A, the internal maxillary artery; Z, the divided zygomatic arch.

FIG. 6.



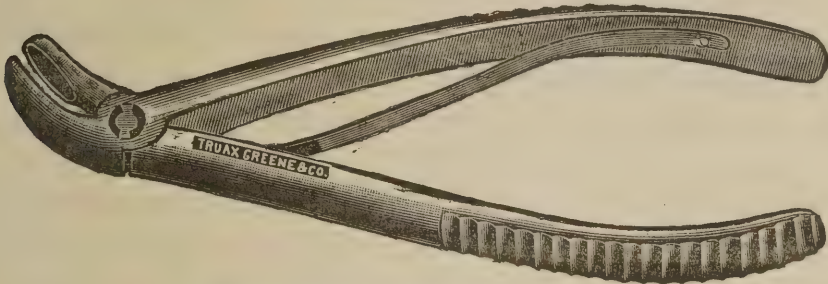
then with bone-cutting instruments I removed the septum of bone remaining between the trephine hole and the foramen by a rongeur of my own devising (Fig. 7), as the ordinary rongeurs cannot be made to enter the opening properly. Rose, however, uses a mallet and bone-chisel, which I have avoided, fearing the jar inflicted upon the brain by the blows. The trephine hole and foramen ovale are thus thrown together into one large opening, giving room to work at the ganglion. Drawing the nerves strongly outward, I made an opening into the capsule by a semicircular incision on its inner side, and, drawing it still more strongly, enlarged the opening sufficiently to get in a small surgical spoon, which was quite sharp. Rose uses forceps and a little blunt hook and hooked knife to extract the ganglion. (Fig. 8.) As the carotid artery runs pretty near the inner border of the ganglion, I kept the convexity of the spoon in that direction, but pushed it cautiously until I felt that it had reached the farther end of the capsule. I then proceeded to scrape with the edge upward and forward, removing the ganglion from its attachments to the superior walls of the capsule which separates it from the brain, and completed the destruction of the parts by twirling the instrument in the capsule. A good deal of venous hemorrhage continued during the whole operation. The inferior maxillary nerve was cut off from the dura mater and taken away after the ganglion itself was



scooped out. Next, I drew down the coronoid process with the attached temporal muscle, and wired the process to its place on the jaw with silver wire. I then turned the masseter flap upward and wired the attached zygomatic arch to its location in a similar manner, closing the whole with sutures. The whole operation was done with the usual antiseptic precautions.

The patient, who had been bedridden for five months and was feeble, suffered some shock, but reacted well after a few hours. After the first pain

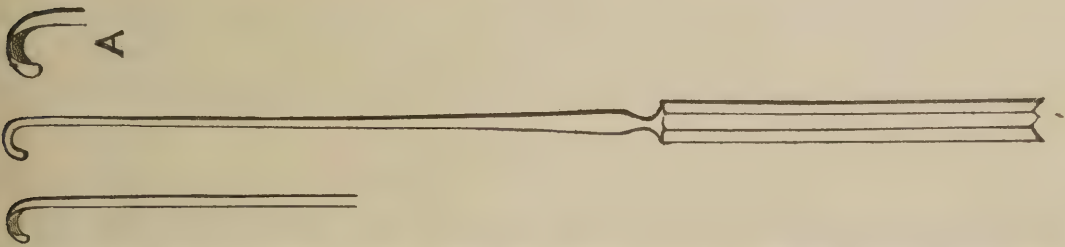
FIG. 7.



The author's rongeur, one-half actual size.

of the operation was over, she found herself entirely relieved and could swallow food without difficulty or suffering. The motor muscles of the eye were found to be paralyzed, as also was the levator palpebræ, showing that the instrument had injured the third and fourth pairs of nerves. This condition of things for the most part passed away, showing that the nerves were not completely destroyed. In a short time the patient returned to her home, fifty miles distant in the country, under the care of her family physician, Dr. C. P. Graves. Information from him shows that she is able to swallow

FIG. 8.



Rose's blunt hook and hooked knife. Actual size except A, which is magnified to show the cutting edge.

without suffering; that she began to eat heartily, and rapidly regained her strength, and soon resumed the personal care of her household. It has been observed in experiments on animals that injury to the fifth pair of nerves is apt to be followed by ulceration of the cornea and loss of the eye. Probably this was due to the fact that the eye being destitute of sensation, the animal no longer protected it by winking and keeping it closed in sleep, so that it was dried by the air and irritated by dust and foreign bodies, and thus became ulcerated. The early experimenters attributed it to the loss of the neurotic control exerted by the nerve over the nutrition. Believing in my own mind that the cause lies in the neglect of the eye rather than in the loss of the ganglion, I requested the patient to keep the eye most of the

time protected by a compress. But after the diminution of the visits of her physician the eye was perhaps less carefully protected, and after a time he found some ulcerations on the cornea. He directed a boracic acid wash and a reapplication of the compress, under which treatment the eye soon healed. It is now about five months since this operation was performed, and the patient is entirely free from pain.

The patient which I now bring before you is very similar to the previous one, except that the pain has existed for some ten years, but she is not confined to the bed. The pain is on the right side of the face as in the previous case, and the patient is a woman. It seems for some unknown reason to be true that the majority of these patients are women, and a great majority of attacks are upon the right side of the face and in the inferior maxillary nerve.

We will now proceed in essentially the same manner as in the previous case,—that is, we will make the incisions at each extremity of the zygomatic arch, with a cross incision like a letter H, turn down the zygomatic arch as before, remove some of the loose fat, and find and tie the internal maxillary artery. At this point we discover a difference between this patient and the previous one. The reason is this: six months ago I operated upon her by excision of the dental nerve, which I accomplished by turning up a flap from the ramus of the jaw, trephining the ramus, finding the dental nerve, and, tracing it upward and inward through the opening in the jaw, I severed it as far up as I could reach, close to the gustatory branch, and drew it out. This relieved the patient for only a few months, and now the disease has returned with full violence, the pain being referred to the same region as before. Now that I have uncovered the parts, I commence my search for the foramen ovale. I see that the previous operation has deprived me of one of my guides,—the inferior dental nerve. But we have the external pterygoid plate easily discovered by the touch of the finger, and can trace its sharp free edge upward to its junction with the skull. Generally the free edge of the process runs up exactly to the anterior extremity of the foramen ovale, but skulls differ in that respect. In some the edge is prolonged in a ridge past the foramen, sometimes on the inner and sometimes on the outer border of the foramen, but always close to it. Sometimes the free edge of the process has to be nipped away a little to give free access to the foramen. This being done, if necessary, a little search with the *probé* at that point will discover the foramen itself, into which the instrument enters without difficulty, and by means of the probe as a guide we find the gustatory nerve. This nerve is recognizable with the finger by its hard cord-like feeling, when made tense by traction on the tissues near it. I cut the nerve and seize it with forceps as an additional guide to the foramen. Suppressing the hemorrhage, I scrape the muscular tissue from the flat surface external to the foramen, and, as before, apply the trephine to this surface and proceed as in the former operation. The flaps are replaced, the bones wired in position, and the parts antiseptically dressed.



The subsequent history of the above patient was as follows: On waking from the ether, she felt the usual pain of nerve operations referred to the old location, although these parts were thoroughly benumbed to the touch. The muscles of the eye were not deranged, showing that the third and fourth nerves escaped injury. After a few hours the pain subsided, and at the end of a month the patient went home to a distant State entirely relieved. Since that time she has not been heard from.

Of the seven cases done by Professor Rose and myself, no one has shown any dangerous symptoms, and not one has failed to obtain perfect relief from the pain. The operation is so utterly new in its present form that there has been no time to decide by experience on the permanency of the cures, but, as I before remarked, there is reason for hoping that in the majority of instances the disease has not extended beyond the semilunar ganglion, and, hence, the operation of removing the whole of it may be expected to be followed by permanent relief.

I devised upon the cadaver several other methods of removing the ganglion, two of which were by opening through the temporal bone outside the pterygoid ridge, lifting the brain on a bent concave spatula, and taking out the ganglion from its upper surface. It appears that Mr. Horsley, of England, has tried this method in one instance upon a living patient, with the result of death by shock in seven hours.

My experiments upon the cadaver convince me that this method can only be carried out at the expense of a good deal of contusion of the middle lobe of the brain, and that by far the safer method is to proceed through the floor of the cranium from below. A considerable variety of incisions, divisions of the jaw, etc., have been proposed by different surgeons for uncovering the foramen ovale, and a number of them are entirely feasible, but, upon the whole, I recommend the method above detailed.

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## *THE INFLUENCE OF MATERNAL IMPRESSIONS UPON THE FŒTUS.*

CLINICAL LECTURE DELIVERED AT THE PHILADELPHIA HOSPITAL.

BY THEOPHILUS PARVIN, M.D.,

Professor of Obstetrics and Diseases of Women and Children in the Jefferson Medical College, and  
Member of the Obstetric Staff, Philadelphia Hospital.

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I AM indebted to the kindness of the resident physician, Dr. Wilson, for the following statement, as given by the mother, in regard to the supposed cause of the large, vivid red mark or splotch so distinct upon one side of this infant's face:

When the patient, Mary Mallory, of Ireland, was quite a young girl, she was badly frightened by a fire, in the vicinity of her home, in which a number of cattle were burned to death. She has since been much afraid of fire.

During the early months of her late pregnancy, at the beginning of last fall, patient was badly frightened by seeing another woman light a fire suddenly with kerosene oil. The fright soon passed away, leaving, however, a vague feeling of uneasiness for some time thereafter, though at no time had she an idea that her child would be marked. After the child was born, however, and she was told by the attendant that the child was marked, this fright immediately recurred to her as the cause thereof.

Let me show you this drawing (Fig. 1) of a man known where he resides as "the turtle man." I presented him two or three years ago before

FIG. 1.



"The turtle man."

the class at Jefferson Medical College, and securing a photograph at the time I have had this drawing made from it. You observe that the hands and feet are of normal development, but the forearms, the arms, the legs, and thighs are much shortened. He would be classed among the monstrosities known as ectromelians, and almost enters the subvariety phocomelians,—that is,

FIG. 2.



An ectromelian.

seal-like monstrosities, while the former term signifies abortive or imperfect formation of the members. The story of "the turtle man" has been thus given me :

When his mother was a few weeks pregnant his father, a fisherman, a coarse fellow fond of rude jokes, put a large, live turtle in a cupboard; his wife going to the cupboard in the twilight and opening the door, the turtle fell out, startling her greatly by the noise, and its hideous appearance as it crawled over the floor.

While referring to ectromelian monstrosities, let me show you this picture of a child (Fig. 2), living in the interior of the State, in whom the members



are almost completely absent; the history of the pregnancy I have not been able to learn. In case the members completely fail, the monstrosity is an amelian. And here I cannot help suggesting the utter absurdity of calling a girl, if she has upper and lower limbs, Amelia! This name etymologically signifies without members, and it ought to be forbidden in families unless given to a girl having such defect. It would be just as well to call a boy Beelzebub, or a girl Isabel, if, as is almost certain, this is derived from Ysabel or Jezebel of Jewish times, though, the fact is, one sometimes meets with men and women who are almost wicked enough to deserve these names.

One of the most striking cases of maternal impressions falling in part under my own observation, I have given in my work upon obstetrics, and now repeat it: Some years ago one of the students of Jefferson Medical College called on me to show me that his left popliteal vein was varicose, and gave me the history of the supposed cause of this condition. His mother, when four months pregnant (her ninth pregnancy), was one day visited by one of her neighbors, a woman, who told her how much she suffered from a swelled vein behind the left knee, and, uninvited, at once exposed it to view. The pregnant woman was quite startled by the sight, and expressed her sympathy, but requested that the exposure should cease. When her son was born, a precisely similar condition of his left popliteal vein was found, and continues until the present; no other varicose vein could be found; the mother did not have varicosities in this or in any preceding pregnancy. This case might be supplemented by similar ones, given me by trustworthy observers, both lay and professional, illustrating, as they believed, the influence of maternal impressions.

The late Dr. Fordyce Barker, in a very interesting paper<sup>1</sup> upon the subject of the influence of maternal impressions upon the fœtus, stated that "three of the most distinguished writers of fiction in modern times have based incidents on this belief, in a way which they would not have done if they had supposed these incidents would be rejected by their readers as improbable. Goethe, in his 'Elective Affinities,' describes a case in which strong mental impressions at the time of conception, or soon after, affected the child. Sir Walter Scott, in the 'Fortunes of Nigel,' explains the extreme horror which a drawn sword always excited in James I., owing to the brutal murder of Rizzio having been committed in the presence of his unfortunate mother before he saw the light. The theory of 'maternal impressions' is the groundwork on which is constructed 'Elsie Venner,' that remarkable novel by Oliver Wendell Holmes, most original in its conception, fascinating in its dramatic development, and most suggestive in the curious speculations with which it is interspersed."

It might be added that Scott plainly avowed in "Redgauntlet" his faith in the influence of maternal impressions upon the fœtus. In one of Grimm's

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<sup>1</sup> Transactions of the American Gynæcological Society, vol. xi.

"Fables" a like belief is indicated. In a Scandinavian novel, entitled "Released," by Elin Ameen, published a year or two since, and an abstract of which was given in the *Review of Reviews* last year, a most thrilling narrative relating to such impressions is found. A young wife, two months pregnant, has a husband working in a factory; an accidental explosion occurs, he is killed, and his mangled corpse, every limb and feature torn out of recognition, is brought home, and she falls fainting to the ground at the dreadful shock. Seven months after her child is born, a boy, with only one arm and without lower limbs.<sup>1</sup>

The novelist is nothing if not natural. Persons, facts, and events must be so presented that the former seem real, and the latter true and correct, else the public reject the story. Thus we have the popular verdict in favor of the thesis presented.

Dr. Barker, in the paper which has been quoted, refers to the opinions of many eminent authorities in favor of a belief in the influence of maternal impressions, among them being Montgomery, Rokitansky, Carpenter, Dalton, Flint, Isidore Geoffroy Saint-Hilaire, Allen Thomson, and Hammond. To these may be added Meadows, Spitzka, Busey, and Dabney, as well as several others well known to the profession. I have, in an article published some years ago, quoted the view of Lotze, one of the greatest German philosophers of the century, as sustaining the belief. Lessing, whose fame is a part of the history of literature a hundred years ago, in referring to the subject, expressed a very positive opinion: "If beautiful men produced beautiful statues, these again reacted upon those who beheld them; and the state was indebted to beautiful statues, among other causes, for beautiful men. With us, the sensitiveness of maternal imagination appears to express itself in monsters. From this point of view, I think I see a truth in certain ancient traditions which have been rejected, without qualification, as lies. The mothers of Aristomenes, of Aristodamus, of Alexander the Great, of Augustus, of Galerius,—all dreamed, during their pregnancy, of serpents. The serpent was a symbol of godhead, and the beautiful paintings and statues of Bacchus, of Mercury, of Apollo, of Hercules, were seldom without a serpent. The honest women had feasted their eyes on the god during the day, and the dream awakened the image of the beast. Thus I rescue the dream and surrender the explanation which the pride of their sons and the impudence of flatterers have made of it."

Commodus, son and successor of one of the noblest of Roman emperors,

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<sup>1</sup> The story goes on to tell, with deepest pathos, how the mother, dwelling upon the sad fate of her helpless child when she can no longer care for him, determines that she will release him from it, and so, after baptizing him, believing that without baptism the little Hans cannot meet his father Hans in heaven, places him in his cradle, and, putting a pillow over his face, suffocates him. "No more tears for Hans!" she says. Later we see her in her convict cell, pining away her life with no hope in this world, and, since the priest has told her she must repent, and she cannot, none in the next. "But I released my boy!"



Marcus Aurelius, ranks with Nero and Caligula in vileness and cruelty, has had the vices of his character attributed to the fact that his mother, Faustina, while pregnant with him, was in love with an infamous gladiator.

Burton<sup>1</sup> attributes maternal influence upon the fœtus to imagination, as the following quotations show: "Jacob, the patriarch, by force of imagination, made speckled lambs, laying speckled rods before his sheep." "Persina, that Ethiopian queen in Heliodorus, by seeing the picture of Perseus and Andromeda, gave birth to a fair, white child."

"Pregnant women, when they long, yield us prodigious examples in this kind, as moles, warts, scars, harelips, monsters, are especially caused in their children by force of a depraved fancy in them. She imprints that stamp upon her child which she conceives unto herself."

It must be remembered that the most striking instances of maternal impressions are those in which the influence alleged was instantaneous, not continuous in action. And here is an answer to the objector who asserts that many women who fear their children will be marked do not have their fears realized, while others give birth to children having marks, though they had no such dread; the efficient cause of the marking acted at once, and it may not have been thought of during the pregnancy, but recalled after the birth of the child.

Dr. Barker adduced some striking cases falling under his observation in illustration of the influence of maternal impressions. Dr. Busey, in his remarks upon the paper, brought, from a partial study of the literature of the subject, forty-one to strengthen the position. These series of cases should be read by those who are sceptical upon the subject, and see if other explanation is probable.

The following is one of the most extraordinary of Dr. Barker's cases: "Mrs. —, who had been married but a few weeks, was at the theatre with her husband and other friends. Something, she knew not what, vexed him, and he placed the point of his elbow on her hand, which was resting on the arm of her seat, and held it so firmly that she could not draw it away. Not wishing to make a scene, she bore it silently until she fainted. The fingers were much swollen and very painful for several days. She never lived with her husband afterwards, and subsequently obtained a divorce on the ground of cruelty.

"Thirty-five weeks and three days after the theatre incident, I attended her when she gave birth to a son. On the left hand the first and second phalanges of all the fingers and thumb were absent, looking as if they had been amputated. She has lived abroad most of the time since the divorce. I saw her in London in August last, for the first time in several years, and examined the hand of the boy, now fifteen years old, an unusually bright and clever lad. In reply to a question from me, which she says I had repeatedly asked in the infancy of her child, she assured me that never

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<sup>1</sup> Anatomy of Melancholy.

once during her pregnancy had the thought occurred to her that her child would be born with this deficiency."

Voisin<sup>1</sup> narrates several instances in which idiocy resulted from moral impressions upon the mother when pregnant.

Van Swieten, whose character for intelligence, honesty, and conscientiousness was irreproachable, has told of a young lady coming to consult him, and she had upon her neck what he thought was a caterpillar, which he at once tried to remove. She told him that it was a mark caused by a caterpillar falling upon her mother's neck when she was pregnant, causing her sudden fright. "I examined this mark," said Van Swieten, "and I recognized, beyond the possibility of a doubt, the straight hairs and the color of the insect, and I declare that the resemblance between two eggs could not be more complete."

The common, long-lasting, and wide existence of a belief in maternal impressions is a strong argument in favor of its truth.

The sceptics assert that the cases adduced to sustain this belief are merely coincidences. The answer is that the instances are too numerous to be thus set aside; then, too, very many cases show an exact correspondence between the alleged cause and the effect.

But why, it may be asked, do not maternal impressions thus manifest themselves more frequently? For a similar reason to that which obtains in regard to hypnotism: thus, some persons are incapable of being brought under hypnotic influence, while others readily yield. It is not one in every age, nor every one in any age, that "dreams dreams and sees visions;" not every one that can be poet or painter, statesman or soldier. The susceptibilities of women differ so that a common influence will differently affect them. The sun makes pictures, but there must be the sensitive plates, properly prepared, for their reception.

But there may be deformities, or "marks," without the history of any maternal impression. The history may have escaped observation or record, and, besides, those who hold to the doctrine of maternal impressions never assert that they are the causes in all cases.

But similar anomalies may occur in the young of inferior animals. Well, who that has observed animals, especially those that are highest in development and nearest man, claim that mind is the prerogative and possession of man only? Nay, rather, will he not acknowledge that there are distinct mental manifestations on their part?

But we do not know how the effects are produced, for it must be admitted that, as yet, no satisfactory explanation, whether appeal is made to arrests of nutrition, to changes in the blood, or to nervous action, has yet been given. It is foolish to reject everything which we do not understand; there are various other questions which we cannot answer, and yet our ignorance of etiological relations does not justify us in rejecting facts. As

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<sup>1</sup> Leçons cliniques sur les Maladies Mentales et sur les Maladies Nerveuses.



there is a "path which no fowl knoweth, and which the eagle's eye hath not seen, the lion's whelps have not trodden it, nor the fierce lion passed by it," so there may be psychical influences, swift spiritual powers, which do not have their paths in blood-vessels or in nerves. One day the progress of science and the perfection of intellect may be so great that the mode in which maternal impressions act upon the fœtus will be as clear as the marvels and the mysteries of the electric telegraph and telephone.

Our knowledge is little, our ignorance is great. One might have seen half a century since, or even less, in some of what were then called the Western States, a primeval forest, entered by an immigrant who, after selecting a location, cuts down some trees, builds a cabin and stable with logs, and prepares a few acres for cultivation. He has made what was known as a clearing, a very small space in comparison with the thousands of acres, occupied by tens of thousands of trees and dense thickets and untrodden by the foot of man, which surround him. And so it is with man's knowledge, for he has only made here and there a little clearing in the vast territory which he may one day possess.

The recent discoveries by Tesla as to the power, the modifications, and the modes of transmission of electricity suggest that all knowledge hitherto acquired has only brought us to the threshold of a vast temple of science relating to this marvellous force, which will one day be entered and its mysteries become fully known. Indeed, some of Tesla's experiments suggest the possibility of this force being some way concerned in the phenomena we have been considering, for these experiments prove that according to the number of oscillations it may be transmitted without wire, may enter the body without pain, or may pass through vulcanite as readily as light through glass.

When we remember that physical, intellectual, and moral characteristics are transmitted through a long series of descendants, nay, that some of these may cease during one generation, reappearing in the succeeding one, and that the only material means of transmissions are microscopic bodies measured by thousandths of an inch, our faith in maternal impressions as possibilities will be increased rather than lessened.

"I will praise Thee, for I am fearfully and wonderfully made," exclaimed one of the noblest of the old Hebrew poets, and then declared the process of evolution of the child in the mother's womb under the All-seeing Eye, and according to a Divine plan. Fearfully and wonderfully made does not apply alone to these bodies, but also to the subtler psychical influences that act upon them in their evolution, unseen by human eye, and unexplained by human reason.

NERVOUS WOMEN; CERVICAL PACHYMENINGITIS;  
PROGRESSIVE LEAD-PALSY FROM COSMETICS.

CLINICAL LECTURE DELIVERED AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL

BY CHARLES L. DANA, M.D.,

Professor of Nervous and Mental Diseases; Visiting Physician to Bellevue Hospital.

NERVOUS WOMEN.

GENTLEMEN,—I showed you last Tuesday two or three nervous women, and I will tell you to-day something about the types that we meet with in this city and in the East. There are three: (1) nervous girls between the ages of fifteen and twenty-five, unmarried, anæmic, and showing a varied and peculiar train of symptoms; (2) nervous women between twenty-five and forty; and (3) those at the period of the climacteric.

*Symptoms.*—1. The young nervous women are usually anæmic, dyspeptic, and constipated; their nutrition is not good; they are thin; they excrete large quantities of limpid urine; they often have spinal pains and headaches of the migrainous and other types, and almost all of them suffer more or less at the time of menstruation. They have mobile pupils. Their special senses are keen, to the point of hyperæsthesia. The heart is irritable; the vaso-motor centres are unstable. They have cold, clammy extremities. They are vivacious, quick, observant, impatient, living on their “nerves,” fond of excitement, and indulging in amusements, for which they pay the penalty by prolonged exhaustion.

2. It is the nervous women between the ages of twenty-five years and forty who make up the majority, and the intractable majority, of patients that come to the physician. They are, so to speak, the wreckage of the young nervous women and of healthy young women for whom the burden of life and domesticity was too heavy. For they are usually married and are sometimes prolific mothers, though the worst cases are the childless or the “monopædic,” if you will allow me to coin a word.

I have collected and classified the symptoms in fifty successive cases of nervous women, mostly belonging to this mid-age class. Here is the pleasing list:

Nervousness continually or in “spells”	43	Anæmia.....	9
Dyspepsia .....	16	Paræsthesiæ (numbness).....	7
Insomnia and constipation.....	15	Flushings and sweatings of head and	
Headaches and neuralgias.....	12	extremities.....	11
Weakness continually or in “spells”...	14	Mental depression, confusion, forget-	
Tremulousness.....	10	fulness.....	9
Vertigo.....	10	Palpitations.....	8
Morbid fears, generally in “spells”....	13	Drowsiness or pseudo-narcotism.....	2



Emotional crises.....	3	Spinal pains.....	5
Neckache.....	2	Head-pressure .....	5
Chest oppression .....	4	Nervous cough.....	1
Menstrual troubles.....	5	Nervous diarrhœa.....	1
Anorexia.....	6	Tinnitus.....	2
Boulimia.....	1		

From this it will be seen that nervousness, weakness, insomnia, dyspepsia, morbid and depressing ideas, headaches and neuralgias, vertigo, tremor, and vaso-motor symptoms are dominant.

They often have migraine, but they do not have the fully-developed spinal irritation which is characteristic of the condition in earlier life; they have peculiar feelings of numbness in different parts of the body,—sensations called “paræsthesiæ;” they often have a marked tremulousness of the hands, while the cold extremities and wet hands are not so commonly observed. They also become easily exhausted. They are excessively nervous and irritable; slight noises will startle them; they cannot read long without getting a pain in the back of the head; they suffer from time to time from attacks of profound mental depression, and often have fixed ideas of a melancholy type; they have, at times, “crises,” or “nervous storms,” which may take the form of a headache, a fit of blues, or a lively domestic disturbance. The dyspepsia they have is not of a very severe type; it is usually accompanied with fermentation and acid eructations. The urine always varies in quantity and specific gravity. Sometimes they will pass large amounts of limpid urine.

3. The nervousness of the menopause you all have met with. These patients have hot flushes, tremors, dyspepsia, creeping sensations, mental depression and insomnia, and a long list of nervous symptoms which mainly belong to the vaso-motor class.

*Etiology.*—From an analysis of my cases, I have found that two-thirds of the nervous women are between the ages of twenty-five and forty; next come those at the climacteric. You will find few nervous women over sixty. I speak of nervous *women*, as if there were no nervous men. One-half of American women are nervous, but to every three nervous women there is one nervous man. You remember the remark of one of George Eliot’s characters, “God made the women to match the men,” and one nervous man is quite a match for two nervous women.

There are a great many factors which cause nervousness in women. Here is a list which I get from questioning over fifty patients: miscarriages, excessive child-bearing, sterility, domestic troubles, fright, shock, malaria, infectious fevers, anæmia, and uterine trouble. Masturbation is a cause in not a few cases. As a matter of fact, the causes are extremely different and extremely complicated in almost every case. In the young woman it is due to the fact that she has a neurotic inheritance, has been badly educated, has had little exercise and improper food, late hours, too little sleep, excessive indulgence in amusements. The worst combination for bright young

women is too much social indulgence and too much study. Women cannot go to parties constantly and be successful or industrious scholars.

In middle age the causes, in the lower classes, are excessive child-bearing, lactation, the strain of rearing a flock of children in a large city, where they are huddled together; brutality and intemperance on the part of the husband; in the higher classes, the hereditary element is more marked. The taint is brought out by vice and luxurious living, indulgence in stimulants, and the excitements of city life. Child-bearing and domestic troubles are also causes here. I think the importance of uterine disease has been exaggerated. In my own practice I have not seen much good done to nervous women by local treatment, except to relieve some of the pain in the lower part of the back, the occipital headaches, and sometimes the pains in the side.

The nervousness at the menopause is, in a measure, physiological, and is due to the changes taking place at that time.

*Treatment.*—The treatment of nervous women is directed (a) to relieving the constitutional neurotic taint, (b) to relieving the system of poor blood and irritants circulating in it, (c) to removing exciting causes in the person's environment, (d) to relieving reflex causes, (e) various general and symptomatic remedies.

(a) Neurotic patients should be fed on a nitrogenous and fatty diet with plenty of water, have work or athletic exercises in the open air, and a regular life, early and long hours of sleep; these are all the commonplaces of therapeutics. Practically, you cannot get neurotics to lead such an ideal life. You can, however, usually regulate the diet and get them interested in outdoor work and exercise.

The proper diet for most nervous people is an essentially nitrogenous and fatty one, because it furnishes the most nourishment with the least expenditure of force. I, therefore, often put my patients on an almost diabetic diet, allowing meat, fish, fowl of all kinds, bread in small amount, spinach, beets and lettuce, and milk in small quantities. I have seen strong men dreadfully depressed at the thought of not being allowed to eat potatoes, but you must insist on the diet just the same. I have seen a chronic and profound hypochondriasis produced by an over-indulgence in puddings and pie, and you must remember that people can get just as inebriated on sweets and potatoes as on alcohol. The diet I have prescribed will, at first, produce constipation and cause a loss of flesh; hence you must add some laxative to the alkaline waters, or else give ten or fifteen drops of cascara every night, or order them stewed fruits, such as apples, prunes, and cherries, and fresh *acid* fruits, but no other kind. To prevent the loss of flesh, you can give them half an ounce of extract of malt in a tumbler of milk three times a day. General directions will not suffice; every little detail must be stated most specifically. Another measure, which will often be of great benefit, is washing out the lower end of the bowel, beginning with lukewarm injections of water, administered through a long rectal-tube



with a fountain syringe raised only a few feet above the bed. The quantity is increased daily, until a gallon or more may be used at each injection. This measure should not be employed continuously for more than three months at a time.

(b) We come next to the method of treatment intended to relieve them of poisonous elements in the blood and of anæmia. The secretions of women are, as a rule, more acid than those of men, and this may possibly account for the more common nervous irritability of women. Hence we direct the patient to drink three or four pints of water daily, in order to wash out the impurities. Alkaline waters may be given, or the patients are told to dissolve a heaping teaspoonful of the following powder in a tumbler of water, either hot or cold, and to drink this every morning:

Rochelle salt, half an ounce;  
Citrate of potassium, one ounce;  
Bicarbonate of potassium, two ounces.

To relieve the dyspepsia, we usually prescribe mineral acids, and muriatic acid in from eight- to fifteen-drop doses in a glass of water, given three times a day, after meals, is one of the best. This will not, as a rule, interfere with the alkaline treatment. Often both nervous women and nervous men are rendered much less nervous by this treatment. It can be materially assisted by putting them on a nitrogenous diet, as described above.

Hot baths taken for a short time weekly, and cold baths with vigorous rubbing daily, help to get rid of the dyspeptic, lithæmic, rheumatic, and other humoral irritants. Regular respiratory exercises are also useful. I sometimes make my patients get two gallon bottles, adjust them with rubber and glass tubes, and have them blow a gallon of water from one bottle to the other daily. The same apparatus is used for expanding the lungs after a pleurisy.

(c) The subject of isolation, rest-cure, travel, etc., I have not time to touch upon. The more chronic the case, and the more hysteria there is in it, the greater the need of isolation.

(d) I have not time, either, to speak of treatment based on the reflex causes, but I may say that I do not think you can accomplish much by it. I have seen few, if any, cases really cured by uterine or ocular treatment. This does not imply, however, that you should neglect to see that any real local trouble is properly attended to.

(e) Under the head of general and symptomatic measures comes, first, the use of drugs. These belong to the class of nervines, antispasmodics, and tonics.

Bromide of potassium or bromide of sodium should be given only under certain conditions, thus: give fifteen grains three times a day for two weeks, and then wait a week before resuming the treatment. You often do harm by not being specific in your directions about the manner in which the bromides shall be taken. If the patients have a tendency to hysterical

attacks, give them capsules of valerianate of zinc, or you can dissolve the bromide in the elixir of valerianate of ammonium. Tincture of sumbul is of about the same value as valerian, and has a somewhat less unpleasant odor. Nux vomica I consider a much better drug than strychnine, and this and arsenite of sodium, quinine, and iron are perhaps the only drugs which will be required. Nux vomica should be given in increasing doses up to about thirty drops three times a day, watching carefully to determine what dose will produce the best effect in each individual case. Sometimes a large dose will not be beneficial while a small one will, and *vice versa*. It should be given for only about three weeks continuously, and then there should be an interval of about two weeks. This line of treatment, however, should not be followed more than three months. For nervous women who are greatly depressed, you can add to the nux vomica three or four drops of the tincture of opium.

In those forms of nervousness in which there is a great deal of melancholy, quinine is of use, and when quinine cannot be borne in ordinary doses the patients will often tolerate Warburg's tincture. In neuralgic and arthritic cases, salicin made from the willow is useful.

Of more value often than any medicinal tonic is the use of mechanical tonics, such as the water-cure. There are three ways of giving the water-cure to nervous women: (1) the lukewarm bath at 95° F. for twenty or thirty minutes, generally at night, but it may be given at any time when they are excited and nervous; (2) the wet pack, which is not only sedative but also has tonic properties; and (3) the shower. The best form of shower is the Charcot or the Scottish douche. Here the patient is placed about ten feet from the spigot, and cold and hot water are alternately directed upon the back. Where this cannot be obtained, the ordinary shower-bath may be used, the patient standing in the warm water in the bath-tub, and using first the warm water and afterwards the cold water for from one to three minutes. When this cannot be borne, the next best thing is to direct the patient to stand in an ordinary bath-tub in a little warm water, and sponge the body very thoroughly with cold water. The more hysterical the case the more severe should be the shower. The worst cases of this kind we treat at the hospital by cold showers, and they improve rapidly. Hysteria is a disease, but it is one which you can often wash out of people in this way.

Electricity is particularly useful in cases where there is a tendency to spinal irritation and hysteria. A strong galvanic or faradic current should be used up and down the back three or more times a week, but unless it can be used frequently and regularly it should not be employed at all. The most powerful tonic is a combination of the galvanic and the faradic currents, made by means of the De Watteville switch. The technique is not of so much importance as it is to see that the currents are sufficiently powerful and regularly given. Static electricity has the most effect upon nutrition and metabolic changes (Damian, Vigouroux), and also more stimulating psychical effect. It is also convenient to administer. The psychical effect



soon disappears, but the mechanical, reflex, and nutritive effects continue, and make it a useful help in treating some of this class of cases.

Young nervous women require tonics, such as Warburg's tincture and large doses of Blaud's pills, together with systematic cold applications to the spine; and, for certain periods, the bromides, valerian, and nervines of that character. Marriage may help them; but, unfortunately, these women are sometimes very prolific. The cultivation of athletics would be the greatest boon that young women could receive. All girls should be examined, shown what deficiencies exist, and taught to make them up by gymnastic exercise.

#### CERVICAL PACHYMENINGITIS.

This man is a carpenter, fifty years of age, who four months ago fell on the back of his neck. On returning to work he found that he could not lift anything, and this disability has continued for three months. On examining the arms systematically, we find partial paralysis of the right upper extremity. There is paralysis of the shoulder muscles, *i.e.*, of the muscles of the scapula, the trapezius muscle, the deltoid, and all those which raise the arm. There is also a paralysis of the biceps and a weakness of some of the other groups of arm muscles. He cannot close the hand very tightly, but he can pronate and supinate the wrist, and there is no paralysis of the extensors. The left arm is also involved, the grasp of the hand not being much stronger than that of the right. There is a fibrillary tremor of the left upper extremity. His legs are not at all affected, and the facial muscles and tongue are all right. There is a slight tremor about his lips, but perhaps that is due to excitement. There is no evidence of lead-poisoning about the gums, and he does not work at painting. He has no cramps or twitching or jerking in the arms, but he has pain over the back of the neck and vertebra prominens, and also over the scapula. He has no anæsthesia. There is no history of venereal disease, he is not a hard drinker, and does not smoke to excess.

He has, then, a beginning paralysis of the arm, with atrophy of some of the muscles, the result of a pachymeningitis, caused by striking on the back of the neck when he fell. The thickening of the meninges extends to and involves the nerves, and, by pressing upon and irritating them, causes tremor. That part of the spine seems to be peculiarly liable to pachymeningitis, and the usual mode of onset is very similar to that found in this man's case. After a time the disease in some cases progresses, and paralysis of all the muscles follows. This man is of middle age, and the probabilities are that he will get well.

The treatment for cases like this is rest, counter-irritation by blisters or cautery, and the use of iodides and tonics, such as arsenic.

#### PROGRESSIVE LEAD-PALSY FROM COSMETICS.

Here is a woman, about forty years of age, who for the last five years has been suffering from a gradually progressive weakness of her

arms, so that she is now unable to follow her occupation of seamstress. There is entire inability to raise the wrist, her grasp is very feeble, and there is a good deal of atrophy of the muscles of the forearm and of the intrinsic muscles of the hand. There are no anæsthesias, no pains, and no fibrillary twitchings of the muscles.

On holding her arms out in front of her, there is a very characteristic picture presented; she finds great difficulty in stretching out her hands, and there is an inability to raise the wrist. If you examine her further, you will find that the paralysis involves chiefly the extensors; she can supinate and pronate her arms perfectly. In lead-paralysis the supinator longus muscle is rarely involved, and this muscle can be picked out from the others when it is made to contract. Her hand resembles somewhat that found in progressive muscular atrophy, but an electrical examination shows us that the ulnar and median nerves are not especially affected, whereas in progressive muscular atrophy the muscles supplied by these nerves are the ones chiefly involved. You notice also that she can oppose the thumb to the various fingers pretty thoroughly. Further electrical examination shows degenerative reactions in the extensor muscles of the arms chiefly. All these symptoms point to lead-palsy. There is no blue line on the gums and no history of colic. When the patient before us first came to me, however, I noticed that her complexion indicated that she used cosmetic powders, and she admitted having used them for years. There is very little doubt that lead was introduced in this way.

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### *FEIGNED ERUPTION AND ALBINISM.*

CLINICAL LECTURE DELIVERED AT RUSH MEDICAL COLLEGE, CHICAGO, ILLINOIS.

BY JAMES NEVINS HYDE, A.M., M.D.,

Professor of Skin and Venereal Diseases.

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THIS young man resides in a neighboring country town, where, according to the statements of himself and his father, who accompanies him, he has been under the observation and treatment of many physicians, no one of whom has been able to understand his malady or give him the slightest relief. He is suffering from a cutaneous trouble affecting the anterior surface of the left upper arm, and no other portion of the body. The eruptive patch is the seat of painful sensations. It has been at times considerably swollen.

The limb has a very peculiar appearance, different from that presented by the majority of the cutaneous disorders one is likely to encounter in a thousand cases; and it is probably this circumstance which has so obscured the diagnosis to others that, as he reports, no one of his physicians has been



FIG. 1.



DERMATITIS ARTIFICIALIS (FEIGNED ERUPTION).

FIG. 2.



TWIN ALBINOS, BORN OF IRISH PARENTS, IN THE CITY OF CHICAGO.





able even to understand the nature of his disorder. The peculiarity lies in the odd outline of the diseased patch. Observe that it is singularly well defined, and yet highly irregular in shape, with sharp angles in the outline, all of which point downward. Within this border is simply a deeply-tinted erythematous surface, which, being in parts more actively engorged with blood than in others, exhibits in the former sites a tendency to the formation of minute papular elevations of the reddened surface. There is no evidence of crusting, of exudation, of scratching, or of deep infiltration. There is only the sheet of erythematous redness limited by this curiously jagged border.

I have always taught that whenever confronted with a singularly odd-looking eruption, one apparently wholly unlike any seen before, the first resort of the mind should be, not to the recognition of a very rare and obscure disease, but, purely in consequence of the very oddity of the symptoms, to some very ordinary cause than may lie just at hand.

The picture before you is almost typical in its suggestiveness. It is an artificial eruption produced by some agent which I suppose the lad has himself employed for the purpose of producing the desired result. You will observe that it is limited to the part of the left arm most accessible to the right hand, and he admits that he is right-handed. You will also observe that, as he has applied the irritating or caustic agent, it has dripped downward as a consequence of gravity, so as to produce the angles to which I have called your attention. This explains all the symptoms in the case,—the erythema, the subjective sensation, and the minute papulation.

I had a word with him in private before bringing him before you, but I could not make him confess the deception. He is a remarkably bright young man, however, and was quite adroit in changing the subject and in appearing not to understand what I meant. I shall have him well watched in the hospital till this trouble is at an end, but it is an interesting fact that in most of these cases the discovery by a physician of the deception practised closes the history.

Why should any one attempt a deception of this kind? It is not always easy to make answer. In the case of young women, a morbid desire for sympathy, an attempt to appeal to charitable persons, to gain admission to a hospital, etc.,—these and other motives are often sufficient. I suspect that the reason for the action in this case was a desire to be brought from a small country town to a big city where curiosity might be gratified. I have been unable to discover the agent employed in this case to produce the effects.

(In the course of three days this patient returned home, admitting that he was entirely relieved. He had been given merely a dusting powder for local use.)

#### TWIN ALBINOS.

The twin brothers whom we have the opportunity of seeing to-day, through the kindness of Dr. Hinde, are examples of universal albinism. In each the hair and the skin are white, the pupils red, the irides pink, and

the globes of the eyes in constant movement, as a result of photophobia. The most conspicuous difference between their appearance and that of the albinos who are often exhibited in public is that one fails to recognize, in the short and white hair of these children, the length, softness, and silkiness of that of the others.

These are the children of Irish parents and were born in the city of Chicago. In this matter they represent a true *lusus naturæ*, since it is indeed rare that albinos are found among descendants of Celts. The father, who is before us, exhibits, as you see, no pigment anomaly, and the mother is said to be similarly free. This, however, is the rule and not the exception in the parents of persons having this form of congenital leucoderma.

It is the races that are naturally most deeply pigmented that offer us most frequently and conspicuously examples of pigment anomaly. The albino properly belongs to the African race, just as it is the negro who presents us with the most striking picture of the "piebald skin." It is possible that transfusion with the blood of a pure African might be followed by valuable results in cases of this kind. For while the albinism of the skin is not in itself a grave matter, that productive of the ocular symptoms is distressing. As a rule, persons thus afflicted are both asthenic and ill developed.

(The albinos were then photographed in the amphitheatre.)

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## APHASIA.

CLINICAL LECTURE DELIVERED AT THE HALIFAX MEDICAL COLLEGE, HALIFAX,  
NOVA SCOTIA.

BY G. D. SINCLAIR, M.D.,

Assistant Superintendent, Hospital for the Insane; Professor of Mental and Nervous Diseases in the  
Halifax Medical College.

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GENTLEMEN,—I wish to speak to you to-day of the affection known as *aphasia*, by which I mean the condition resulting from disease of the cerebral hemispheres, usually on the left side, in which we have derangement of the elements of speech. This is not to be confounded with loss of voice or simple derangement of articulation, such as you have in bulbar disease.

I am not surprised that students have trouble in getting a clear idea of what *aphasia* is. Text-books on general medicine have different names for this condition, and there is a great deal of theorizing indulged in to explain the pathological reason for the clinical facts.

Still, every year brings knowledge in this department of medicine,—cases are reported, and, when opportunity occurs, post-mortem examinations are made, and the morbid appearances studied side by side with the symp-



toms seen during life. By comparing and classifying the results our theories are tested and weighed, and those unsupported by facts are being gradually rejected.

It is interesting to note that the modern study of cerebral localization received its first impetus from the assertion made by Broca, in 1861, that the production of articulate speech was regulated from a "speech-centre," which he placed at the inferior portion of the third frontal convolution on the left side of the brain.

He supported his original claim by publishing two cases of *aphasia*, in which, after death, disease was found in the region, and in a second communication brought forward fifteen cases, in fourteen of which the lesion was found in the same region.

This was in opposition to the generally-accepted doctrine of Flourens, that the brain was a single organ, and always acted as such. To test this teaching, Fritsch and Hitzig began the experiments which have been followed up with such brilliant results by Ferrier, Horsley, Beran, and others, and which have not only proved the correctness of Broca's claim, but have also revolutionized our ideas of the anatomy and physiology of the brain.

We are now taught that the speech processes are in the cortex of the brain, and that they are *sensory and motor*,—that by the former speech is received, and by the latter it is uttered; that either of these can be the seat of disease, the result being an interference with speech; that in the one case we have failure to comprehend speech, and hence an inability to reply correctly, and in the other, while we understand what is said to us, we have lost the power of muscular co-ordination required in articulation, and cannot reply.

To the first form of disorder the name *sensory aphasia* is given, and to the second *motor aphasia*.

It is the latter form of disease which has for its cause derangement of Broca's speech-area, and of which I now speak. We have also good reason for thinking that through the white substance of the hemisphere there is a speech-tract from this area to the internal capsule, and a communication through the corpus callosum into the corresponding area of the right hemisphere, and possibly that there is also a tract from Broca's centre

FIG. 1.

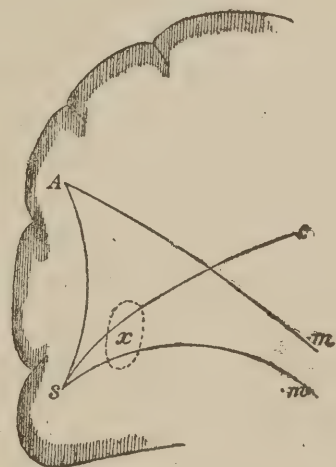


Diagram of probable course of fibres from motor speech-centre. *A*, hand-centre in middle of ascending frontal convolution; *A m*, fibres from this to internal capsule; *s*, motor speech-centre; *s c*, fibres from this to corpus callosum, and *s m*, to internal capsule; *s A*, fibres from speech-centre to hand-centre. A lesion at *m m* will cause only transient aphasia, the speech-process being able to pass by *s c* to the corpus callosum of the opposite side and speech-area there. A small lesion at *x* would cause permanent aphasia, since it involves both the fibres to the corpus callosum and internal capsule, but would not abolish expression by writing, the fibres *s A* escaping. From Gowers's work.

to the centre regulating the muscular movements of the upper extremity of the right side, used in writing, as is shown in Fig. 1.

The existence of such communications explains certain cases of aphasia which occur as a result of a subcortical lesion. They also enable us to understand how such aphasia may be only temporary, if the lesion is so placed as merely to injure the tract to the internal capsule; how it may be complete if both this tract and that going through the corpus callosum to the third frontal convolution in the right hemisphere is destroyed, and how, if both of these tracts are involved, the patient may still be able to write, as the communication between the speech-centre and the area-centre is intact.

Now these areas, motor and sensory, are most fully developed on the left side of the brain in right-handed persons,—and that class constitute the vast majority of our race,—whether this is true because we are generally right-handed, or whether we are right-handed because the left side of the brain is first formed, I know not. It is more than probable that both sides are similar in structure, and we think that this fact explains how, after injury of the left hemisphere, the right begins to acquire powers which enables it to perform the duties of the injured side, and that after an attack of aphasia a patient may in time regain some use of articulate speech, though his efforts are clumsy and his vocabulary is limited. In children it is noticed that, after an attack of *aphasia*, they reacquire the use of articulate language at a much earlier date, and generally in a more complete manner, than adults, due to the comparative ease with which their right hemisphere can be educated up to the same degree of usefulness as the disabled left. Indeed, it is possible that up to a certain time the right hemisphere always assists the left.

Aphasia may be produced by embolism of the middle cerebral artery, by softening of the brain, by hemorrhagic effusion in or upon Broca's area, or immediately beneath it, by pressure from a tumor or fractured bone. The commonest cause is the first.

Many of you will remember a patient in the Victoria General Hospital, last year, who gave you an excellent example of motor aphasia. I give here a condensed history.

E. R., aged thirty-two, admitted in December. While working was suddenly seized with paralysis, affecting the right side, and accompanied with absolute loss of speech. When admitted, was unable to move the right arm or leg, and, while understanding all that was said to her, was entirely unable to articulate or even make a sound. She had been a patient the year before, suffering from acute rheumatism, from which she recovered, leaving the hospital with a diastolic murmur. Her life was not correct from a moral point of view, and her education had been very limited.

I saw her after she had been some weeks an inmate of the hospital. The moment she saw me a look of intelligence so keen passed over her face that the visiting physician asked her if she knew me. She nodded her head in the affirmative. I asked her where she had seen me, and suggested Halifax. She shook her head, *No*. In Dartmouth? She again nodded, *Yes*. Where, at Mount Hope? *Yes*.

Now this was interesting to me, and upon my return to the asylum, I searched our records both of patients and employés, and among the latter found the girl's



name, and discovered that she had been in our service ten years before. She had not only lost the power of speaking, but, from the paralysis of the right hand, could not make the attempt to write; she could not read, though she perfectly understood what was read or spoken to her. She died, and at the post-mortem examination an embolus was found plugging the left middle cerebral artery, and surrounded by an area of softening which included the entire lower portion of the third frontal convolution.

This case is illustrative of the fact that aphasia is a disease which is very sudden in its onset.

This girl with no warning suddenly became hemiplegic, absolutely speechless, and while continuing thus to the end of her illness, was not intellectually deficient, and the post-mortem showed a positive cause,—viz., embolism of the middle cerebral artery. In such cases, I judge, the sudden deprivation of a portion of the brain of its blood-supply accounts for the immediate symptoms; the softening resulting from this for the continuation of these. I need scarcely remind you of the peculiarities of the circulation in the brain further than to recall the absence of collateral channels. In addition to the loss of speech (aphemia) in these cases of motor aphasia there is right-sided paralysis and loss of the power of writing, not only as a consequence of the hemiplegia but even independent of it.

Usually, in time, a patient regains first an ability to make use of the language of pantomime or gesture, then he may acquire the use of single words, like *yes* and *no*. These, however, he does not always employ correctly, and when he does not, is usually conscious of his mistake. Still later he may acquire certain phrases, which may or may not be parts of properly-constructed sentences. These he uses upon every occasion; hence they are termed "recurring utterances." It is thought that such a phrase was the last uttered remark previous to the seizure, or that it was the remark about to be uttered when the attack came on, or even that it is an effort on the part of the right hemisphere to take up the work of the left.

Frequently they bear some relation to something occurring at the time of the seizure, as in the cases referred to by Ross, when a man—injured in a brawl—became aphasic and could say "I want protection," or where a signal-man on a railroad, who was stricken while on duty, could say "Come over to me." The power of reading aloud is, of course, gone, and that even of understanding a written sentence is usually lost. Writing is also impossible, not only from the hemiplegia, but even if paralysis does not exist. This seems strange, that a patient having the use of his hand cannot write. It is probable that the movements required to enable us to write are special movements, and are lost even though common muscular co-ordination remains, just as the muscular actions required to produce articulate sounds are different from those needed merely to move the lips and tongue.

Patients sometimes attempt to write with the left hand, in which case the writing is the so-called mirror writing, and is from right to left instead of in the opposite direction.

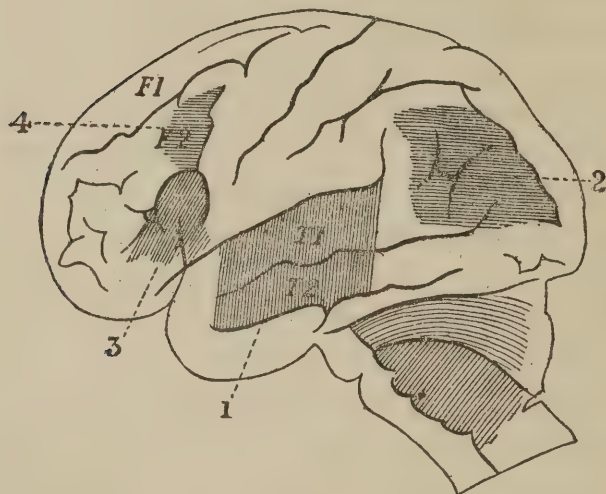
In addition to the ability to say "*yes*" or "*no*," or to use the recurring

utterances mentioned, it may happen that under the influence of emotion a patient can say the correct thing, as "Good-by," when a friend leaves, or a swear word when angry or excited.

Aphasic patients can sometimes sing words to a familiar song when they cannot speak, and I know of at least one case in which the use of figuring remained when the power of reading was gone.

There is an intimate connection between the power to write and to articulate words. Probably we form the word we wish to write in our speech,

FIG. 2.



Situations of lesions causing aphasia. 1, lesion in word-deafness; 2, lesion in word-blindness; 3, lesion in motor aphasia; 4, supposed lesion of agraphia. From Starr's work.

and before we attempt to put it upon paper; if we cannot form it, we cannot write it. Moreover, it is possible that there may be a tract between our speech and our other centres, which is destroyed in the original lesion, especially if it is subcortical. Even when a patient can write, he can often only copy, and he is apt to copy in the character he has before him, — *i.e.*, printed letters if the copy is printed, etc.

The ability to understand printing or writing would

seem to depend to some extent upon the educational attainment of the patient. You must many a time have seen a child able to read only when he could say the word aloud, or an adult who moved the lips constantly, forming the word this way, even though no sound was made, before he was able to make a mental picture.

Such people could certainly not understand printing or writing if suffering from motor aphasia. On the other hand, some of us can form our mental pictures, or revive those already existing as memories stored away in our visual areas, through the sense of sight alone. Such persons would more rapidly recover the power of reading understandingly, even though the ability to articulate was not regained.

There is usually some recovery, probably through the education of the right hemisphere, but there are always peculiarities in the speech and writing of the patient, and the vocabulary is much more limited than before the attack.

Still, cases of motor aphasia occur in which the power of speech is not regained. Such cases acquire an ability to express by gesture simple wishes, and are usually able to communicate their wants and desires by this means.

I saw recently a case of an old lady, who suddenly became paralyzed on the right side and completely aphasic. For a time her power of gesture was lost. In a week this had returned.



She understood all that was said to her, could understand all that<sup>s</sup> was read to her, but could not read. Gradually the hemiplegia passed off, but there was no further gain in speech and no acquirement in her power to write. Her intelligence was not at all affected after the first forty-eight hours.

A second paralytic attack occurred, and she died comatose. No autopsy could be had.

In another case, a male patient, and an inveterate talker, the seizure occurred during the night. I was called early in the morning, and found him completely aphasic, but not hemiplegic. There was a slight loss of power in the right hand, which disappeared in forty-eight hours, and his intelligence remained as keen as before his seizure.

He could read and was able to write his wishes before he was able to say a word. Gradually he acquired the power of speech, though for a long time he would be obliged to refer to an article by describing its use rather than mentioning its name. He could not say *Book*, but when wishing one would ask for "something with letters in it." Both of these cases were in old patients in whom the arcus senilis was well marked, and both died of apoplexy.

I have seen cases also in which the aphasia was very transient.

We have a paretic patient in the hospital now, who, not long since, had a series of very violent epileptoid convulsions, especially involving the right hand and arm. For twenty-four hours after their cessation, there was partial hemiplegia and complete motor aphasia. After this the power returned to both arm and leg. Later he had a recurring utterance. No matter what you said to him, and I think he understood what was said perfectly, he had but one reply, viz., "Write to San Francisco."

Just before his convulsions began he had been talking to me of writing to his relatives who lived in that city. This phrase was his only language for twenty-four hours, then he was able to reply to simple questions correctly, and now, several weeks since his original seizure, he can converse with a fair degree of fluency, although the number of words at his command is limited, and he speaks ordinarily very slowly and deliberately.

Another case at present under treatment, also a *paretic*, and liable to convulsive attacks, became aphasic after an attack. Partial hemiplegia existed here also. This has all gone, but the patient, while appearing to understand what is said to him, replies in an utterly unmeaning gibberish. The only time his language can be understood is when he is made angry; under such conditions he can swear in good old-fashioned English, and evidently means all that he says.

Remember, please, that the centre for articulate speech is in the third frontal convolution on the left side of the brain, only in right-handed persons. Where an individual uses the left hand for all the purposes for which the majority of us use our *right*, lesion on the left side of the brain would not produce aphasia. Did aphasia occur in such a one, speech would be

regained by educating the left hemisphere to do the work of the right. Such cases are not common.

Left-handed people are in the minority, and an embolus is not so apt to block the right middle cerebral artery as the left, for anatomical reasons. Should the embolus lodge in the front branch of the artery, aphasia without hemiplegia would likely occur.

There is another form of aphasia of which I spoke in the beginning of my lecture, in which the difficulty in the use of articulate speech arises from some disease preventing the patient understanding either spoken or written language. (Fig. 3.) Failing to comprehend, he cannot reply; the

FIG. 3.

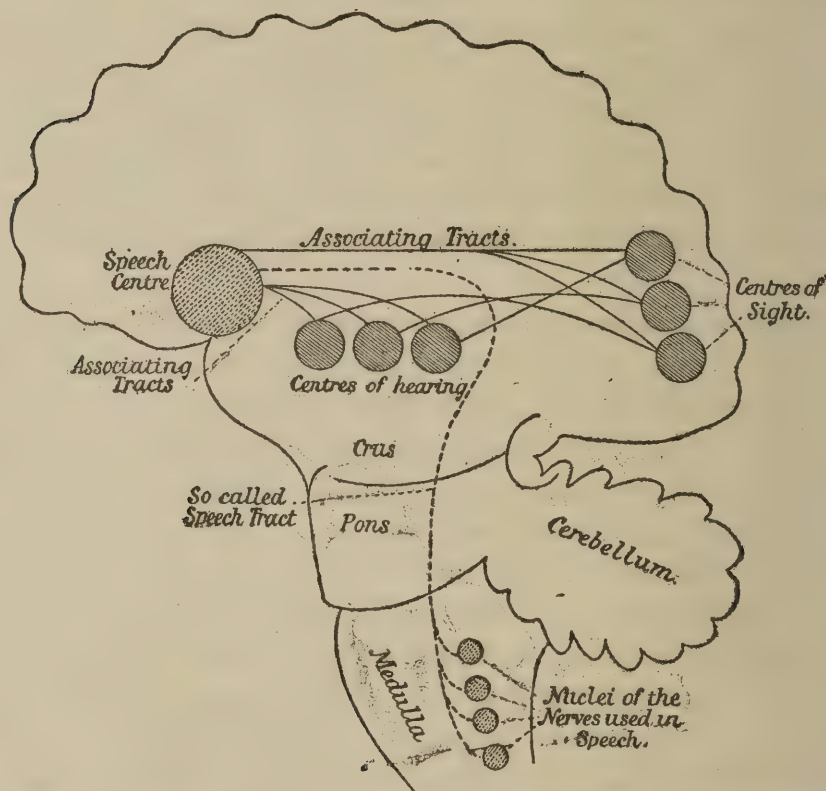


Diagram from Ranney's work on nervous diseases, to illustrate the mechanism of the apparatus required in speech. This figure must not be regarded as intended to accurately portray the anatomical relations of the various tracts and centres to each other.

intellectual rather than the emissive apparatus is at fault. To this form the name of *sensory aphasia* is given. We receive our ideas or we comprehend speech through our auditory or visual centres; the blind through their auditory and tactile.

This form of disease occurs, then, in two forms, rarely perfectly distinct, —one in which we fail to comprehend spoken language, called *word-deafness*, the other, in which we have lost the power of understanding written or printed language, called *word-blindness*.

Bartain said that the former of these conditions was due to disease of the auditory perceptive centre, which Wernicke discovered to be in the first and second temporal convolutions on the left side. *Word-blindness* is



due to disease or lesion of the visual area, which is now said to be in the occipital lobes and angular gyrus.

To explain why disease in these regions should give us the peculiar symptoms which are present, we must remember that the theory is held that impressions made upon the centres presiding over separate functions are registered, and produce a physical trace; one writer says that the accumulations of these traces are the sum total of our knowledge of various subjects and things, and that in a condition of health we are able to reach these past impressions as memories, which memories enable us to form mental pictures of past events, sounds, sights, tastes, etc. The communication existing between the various centres through the association-fibres of the white substance of the brain enable us to connect our various memory pictures. For example, I mention the word orange to you, you all have a memory-picture of a fruit, with a certain size, color, feel, appearance, and taste. You form such a picture as a result of your past experience with the fruit of whose varied qualities you have had actual experience.

Now, understand that patients who suffer from word-deafness are not deaf in the ordinary sense. They can hear sound, the ringing of a bell and the ticking of a watch are still appreciated by them, but their memory-pictures of the sound of articulate speech have been destroyed. To a new-born babe language has no meaning. Only gradually does he acquire the power of understanding, and only after he has stored away many word-impressions can he follow conversation intelligently.

The brain of a sufferer from *word-deafness* is not like a child's upon which no impression has been made, but is in a condition in which past impressions are anæsthetized, and therefore cannot be called upon to revive his word-pictures.

In such cases the patient can talk, but his words are wrongly placed; he can read aloud if free from word-blindness, but he may or may not read correctly; such patients may be able to write spontaneously or to copy, but they cannot write to dictation,—the sound of the word having no meaning to them, they cannot organize the muscular movements necessary to record it.

In *word-blindness* the patient is quite able to see, and in moving about will avoid obstacles, but his memory-pictures of printed or written language cannot be recalled,—he is psychically blind.

This blindness may go beyond that of printed or written characters, and he may be unable to recognize any object or to call it by name unless he can use some other sense to assist him. McEwen's case could recognize a man when he heard his voice, or an object when he felt it, but in no other way. (Fig. 4.)

Word-blindness and word-deafness are apt to coexist, from the fact that the regions presiding over these functions are in juxtaposition, and supplied by practically the same blood-vessels.

A patient suffering from word-blindness cannot copy writing, but can

write from dictation or spontaneously ; he cannot, however, read what he has written, but may attempt it, totally unconscious of the mistake he is making.

These two conditions may coexist, or each may occur separately from the other, and each may be complete or partial.

Partial word-deafness we are all familiar with in our inability to recall the name of some person, but which we recognize the moment some one

else speaks it. This is a mild form, an amnesic form of word-deafness. To test for word-deafness, show the patient some familiar object, and ask him to name it ; if he is unable to do so, call it a wrong name and see if he assents ; if he does, the condition is complete, and if he dissents, but recognizes the proper name when called, it is only partial.

Sometimes a patient will endeavor to convey his idea to you by describing the object,

as a patient of mine did who could not remember the word “*steamer*,” but could say “ship that goes by steam.”

Partial word-blindness would be shown by a patient being able to read aloud or even copy, but who would show no evidence of understanding what he has read or copied.

The inability to write is known as *agraphia*, and occurs as a symptom of both *motor* and *sensory* aphasia.

In the former case the pen cannot be used at all ; in the latter a person accustomed to write can write to dictation.

Cases are also on record in which patients suffering from word-blindness could read if allowed to trace the letters with the finger ; in such cases there is a visual memory of the word, but it has to be called up indirectly through the muscular sense. The same thing has occurred when the sound of a voice has revived the memory of a person's name which the sight of his face could not recall.

These studies are very interesting, but we cannot go further now as to prognosis.

Motor aphasia, due to embolism of the middle cerebral artery which leads to softening, is very serious.

If only a branch is occluded, and improvement occurs in forty-eight or seventy-two hours, it is more hopeful.

Motor aphasia, the result of effusion or from a traumatic cause, is also very serious.

FIG. 4.





Both forms of sensory aphasia from embolism are more apt to be recovered from than the motor variety.

If from a traumatic lesion which a surgical operation cannot relieve, the outlook is grave.

Can we do anything in the way of treatment? If the cause is an effusion, a growth, or a depressed fracture, we can try to remove the cause by surgical operation,—trephining over Broca's area for motor aphasia, over the temporal convolution on the left side for word-deafness, and over the lower parietal and occipital for word-blindness. Several cases are on record in which such operations have been performed with decided benefit to the patient.

When the cause is softening from embolism, we must try and educate the other hemisphere to take up the work. This is a slow and laborious process, and only moderate success must be expected.

Words are forgotten more easily than letters; in re-educating we should commence with letters and go on gradually to words.

The fact that all of these regions have the same blood-supply explains the mixed symptoms obtained when embolism is the cause of the *aphasia*.

# REVIEW OF MEDICINE.

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## MEDICINE.

IN CHARGE OF JUDSON DALAND, M.D.,

Instructor in Clinical Medicine and Lecturer on Physical Diagnosis and Symptomatology in the University of Pennsylvania, and Assistant Visiting Physician to the University Hospital.

ASSISTED BY

JOSEPH P. TUNIS, M.D.,

Philadelphia.

A Volumetric Study of the Red and White Corpuscles of Human Blood in Health and Disease, by Aid of the Hæmatokrit. (*University Medical Magazine*, November, 1891, p. 85.)

Dr. Judson Daland gives in detail the results of his careful researches on this subject. He has found that the hæmatokrit is of much more practical use than the Thoma-Zeiss apparatus, because if accurate results are secured by the latter, it is necessary to prepare not less than two or, better, four slides, and count in each slide not less than sixty-four squares. This would require a great deal of time, patience, and skill, besides being a great strain on the eyes. "The hæmatokrit gives as accurate, if not more accurate, results than the Thoma-Zeiss apparatus as ordinarily employed, requires less skill, calls for no eye-strain, and the volume of red blood-corpuscles, and number per cubic millimetre, and volume of white corpuscles, may be determined within ten minutes."

The hæmatokrit is so constructed as to separate by centrifugal force the blood-corpuscles from the containing serum,—the former being of greater specific gravity than the latter.

One turn of the large wheel of this instrument causes the brass frame at the top of an upright piece of steel to revolve one hundred and four times. The frame receives two glass tubes, which are to contain the blood, each measuring thirty-five millimetres in length, and held securely in position by a spring. The glass tubes have a capacity of about twenty-seven and a half cubic millimetres, are three and three-fourths millimetres thick, thirty-five millimetres long, and have a calibre throughout measuring one millimetre in diameter. A scale on the outside divides it into fifty equal parts, in the same manner as the scale on an ordinary thermometer.

To obtain the volume of corpuscles: the blood is mixed with an equal quantity of a fluid preventing coagulation, and is then rotated; the red corpuscles form a column at the periphery of the tube, and measure, let us



say, twelve and a half. As the blood is diluted one-half, this result is multiplied by two, equal to twenty-five, and to convert this into percentage it is again multiplied by two, as the scale is divided into but fifty parts, which gives fifty per cent.

After considerable experimentation the writer has concluded that a two and a half per cent. solution of potassium bichromate is by far the most useful liquid to dilute the blood for counting red blood-corpuscles. The method of applying the hæmatokrit is extremely simple, and requires very little additional apparatus.

**Anæmia: Its Treatment with a New Preparation of Iron.** (*New York Medical Journal*, May 7, 1892, p. 512.)

Dr. Reynold W. Wilcox, in discussing this question, follows the classification of Oppenheimer and Graber.

1. Simple anæmia; where both the corpuscles and hæmoglobin are diminished.

2. Chlorosis; where the corpuscles are normal, and hæmoglobin diminished (females).

3. Primary chlorosis, or pernicious anæmia; where the corpuscles are diminished, and the hæmoglobin is relatively increased.

The writer mentions a number of causes which may give rise to anæmia: 1, hemorrhage; 2, pathological discharges,—*e.g.*, prolonged lactation, sexual excesses, profuse menstruation, suppuration, albuminuria, etc.; 3, malignant growths; 4, toxic and infective processes, such as the fatal cases of pernicious anæmia, reported by Koran, from carbon-dioxide poisoning, from tea, coffee, tobacco, syphilis, etc.; he includes here those cases of auto-infection designated fecal anæmia by Sir Andrew Clark; 5, animal parasites; 6, mechanical obstacles to taking food; 7, dyspepsia; 8, venous stasis; 9, malaria, leucæmia, etc., and 10, fever.

He considers two physical signs of anæmia: *a.* The *bruit de diable* of Bouillaud, which is due to relaxation of the venous walls, and a comparative emptiness of the vessels. *b.* The cardiac murmurs, which are due to functional disorder of the papillary muscles and are ventriculo-systolic.

In determining the composition of the blood the writer employs the hæmoglobinometer, made by Reichert, of Vienna.

In the *treatment* the cause should first be determined and removed if possible. The food should be nourishing and easily digested, mostly nitrogenous. The patient should take a regulated amount of exercise in the open air. Bad habits should be broken off, and proper remedial measures instituted. While intestinal antiseptics are useful in certain cases, iron is the remedy *par excellence*. While the tincture of the chloride is the most valuable preparation, it is objectionable in that it excites nausea, disgust, and vomiting, stains and destroys the teeth. The writer believes that these disadvantages are obviated in Weld's syrup of the chloride of iron, and its therapeutic efficacy is not in any way impaired by the removal of these

disagreeable features. Weld's syrup is simply the tincture of the chloride of iron, U.S.P., with the excess of acid neutralized, and a certain amount of syrup of gaultheria added to improve the taste. Each fluidounce of Weld's syrup contains forty drops of the tincture of the chloride of iron. The syrup stains the teeth, but will not injure the enamel as the tincture does.

**Pneumonia and its Treatment.** (*Times and Register*, May 7, 1892, p. 471.)—Dr. Hiram Corson bases his remarks and conclusions on an experience of sixty-five years in general practice. He believes that pneumonia is first a congestion, then an inflammation, and if that be not arrested suppuration takes place. It is one of the most satisfactory diseases when properly treated; but when managed by arterial sedatives and their aids, stimulants and excess of food, it becomes a most fatal one. There is no rival to *bloodletting* in the treatment of pneumonia.

In the discussion which followed the reading of the paper before the Philadelphia County Medical Society, April 13, 1892, Dr. William Pepper seemed to voice the sentiment of the majority present when he said, "While not prepared to admit its necessity as a remedy in all cases, I must state that I find myself confronted—not rarely—with a group of symptoms indicating oppression of the heart, and approaching cyanosis, which yield to prompt and moderate venesection as to no other remedy."

**The Cause of Sea-Sickness.** (*Boston Medical and Surgical Journal*, April 21, 1892, p. 390.)—Dr. Charles Norton Barney reviews the theories which seem to him the most plausible to account for this distressing condition. A distinction should be made between the genuine sea-sickness—that which is mechanically induced—and the subjective form, which is due to some purely emotional cause. Some persons exhibit a predisposition to sea-sickness, which shows itself on land as well as on the water in a condition of neurasthenia. Then there is the minor form of sea-sickness, which is caused by the mere churning about of the food in the stomach, and is promptly relieved by vomiting.

That the motion of the boat *per se* can and does cause *mal de mer* is best explained by the theory which places the origin of the trouble in the inner ear, for the following reasons:

1. Experiments upon birds have shown that irritation of the semicircular canals causes loss of equilibrium, followed almost always by vomiting.
2. In Ménière's disease there is the reverse of sea-sickness, the irritation of the canals causing the unusual movements, while in sea-sickness the movements of the body which result from the pitching of the ship cause the irritation of the canals; and both are accompanied by vomiting.
3. It has been noticed that all deaf-mutes who were insusceptible to dizziness, on account of the impairment of these semicircular canals by disease, were also free from sea-sickness.



## THERAPEUTICS.

IN CHARGE OF ALEXANDER D. BLACKADER, B.A., M.D.,  
Professor of Therapeutics, McGill University, Montreal, Canada.

**A Mechanical Treatment of Erysipelas.** (*Therapeutische Monatshefte*, February, 1892). By H. Kroell.—The following treatment is said to give good results in the management of erysipelas when occurring on the head or limbs. Bands of caoutchouc are fastened around the affected parts tightly enough to interfere with the passage of the streptococci, but not so tightly as to interfere with the circulation of the isolated parts. The bands used should have a width of three centimetres, and a thickness of two millimetres. The pressure exercised by the bandage distinctly hinders the spread of the disease, but the fever lasts as long as the life of the streptococcus. The bandage must not be removed too soon. Care must be taken to watch the circulation in the isolated parts, and the pressure must be either relaxed or altogether removed on the appearance of any lividity.

**Subcutaneous Injection of Salt-Water in the Gastro-Enteritis of Young Infants.** (*La Médecine Moderne*, April 14, 1892, supplement).—Attention is again called to the value of this mode of treatment by a case recorded by Dr. Demiéville of an infant of four and a half months, in which this measure was resorted to, after all the ordinary means had been employed without success. The child was in a state of complete collapse, when from one hundred and twenty to one hundred and fifty grammes of a sterilized solution of sodium chloride, six parts to one thousand, was injected under the skin of each thigh. During the operation the child gave several loud cries, but did not seem to suffer seriously. Afterwards gentle upward friction was employed to facilitate the absorption of the fluid. There was an immediate improvement in the child's condition. Vomiting and diarrhoea ceased, and alimentation again became possible. The injection must always be made under the strictest antiseptic precautions, and care must be taken that its temperature be at least that of the blood.

**The Hypercinetic Action of Digitalis, and its Antiphlogistic Action in Pneumonia.** (*L'Action hypercinétique de la Digitale, et son Action antiphlogistique dans la Pneumonie. Bulletin Général de Thérapeutique*, February 15, 1892.) By Professor Pétresco, of Bucharest.—Since 1883 Professor Pétresco has treated pneumonia by an infusion of digitalis-leaves prepared in the strength of from four to eight grammes, sometimes twelve grammes, to two hundred grammes of water and forty grammes of simple syrup. Of this the dose is a tablespoonful every half-hour. These portions are repeated, night and morning, for two or three days in succession, according to the temperature and the character of the pulse. Many of his

patients have taken eight grammes of digitalis-leaves in the twenty-four hours with most satisfactory results. Given thus, these large doses have the effect of checking (*jugulating*) the pneumonia. The fever and all the physical phenomena, local as well as general, disappear as if by enchantment. A temperature of 40° or 41° C., after three potions of four grammes of digitalis-leaves, falls to 36° or 35°; the pulse, from 120 to 130, may only mark 28 per minute, while all the patients are said to find themselves well (*dans l'état d'une parfaite santé*) twenty-four hours after they come completely under the influence of the drug. Dr. Pétresco has not observed any phenomena of intoxication; the larger doses are better borne when the pneumonia is of the more severe type. The author has published a great number of observations to support his methods. The mortality in his cases has been only slightly over one per cent. (1.22).

**On the Abuse of Mercury in the Treatment of Diseases of the Eyes.** (*British Medical Journal*, March 26, 1892.) By E. Landolt, M.D., Paris.—The writer gives a caution against the indiscriminate use of mercurial preparations in ocular affections. In the atrophy of the optic nerves symptomatic of tabes dorsalis, he thinks there is little chance of mercury modifying it in any possible way, and would prefer simply to place his patient under the most favorable hygienic conditions. If the general health can be improved, the power of vision will probably share its fortunes. In the same way he protests against its use in old-standing affections of the retina and choroid. He thinks it also inert in other affections in which the absorbent effects attributed to this metal seem to give it a certain right to be tried, such as the chronic exudative inflammations of the visual tract. Except when these depend upon syphilis, mercurial treatment is at least superfluous if it does not exert a bad influence. These ocular diseases are met with almost always in cachectic persons living under unhygienic conditions, and in treating these the raising of their general tone is of the greatest importance. He cites several cases in proof of his assertions, and states that he is convinced of the absolute uselessness of mercurial treatment in the diseases above referred to.

**Remarks on the Tannate of Mercury.** (*New York Medical Record*, March 12, 1892.) By S. Lustgarten, M.D.—The special advantage of this preparation exists in its peculiar chemical reactions. As it is not acted upon by dilute acids, it will pass the normal stomach without any symptoms whatever. As soon as it reaches the duodenum, the reaction changes to the alkaline one, and it is reduced to exceedingly small globules of metallic mercury, so that its direct absorption in this state by the villi of the small intestines is imaginable. Although in a few cases irritation of the bowels is recorded, yet it is generally admitted that the salt in question is a mild and non-irritating one. The daily dose for adults begins with three grains, and if this be well borne, it can, if necessary, be increased to five grains or



more. One course of treatment consists of one hundred to one hundred and fifty grains. In the minority of cases it is liable to produce two or three soft passages a day, but in the majority it does not interfere with the bowels at all. Careful dieting is necessary in persons prone to diarrhoea, but the use of even small doses of opium appears to be unnecessary. The tannate has also given excellent results in the treatment of children in the hereditary as well as in the acquired forms of syphilis. The dose in these cases is a third of a grain from two to four times a day.

The formula recommended for adults is the following :

R Hydrargyri tannic. oxydulal, gr. iss ;  
 Ac. tannic.,  
 Sacch. lactis, āā gr.  $\frac{3}{4}$ .—M.  
 Fiat in pulv., in capsul. gelatin.  
 Sig.—One, twice or three times a day.

The one-grain soluble pills also give good results.

**The Dangers of Antipyretics in Typhoid Fever.** (*Medical News*, April 23, 1892.) By J. H. Musser, M.D.—Dr. Musser thinks that under some conditions fever may serve a physiological purpose in the economy as a stimulant. He warns against the use of antipyretics in typhoid fever under certain circumstances. First, during the rise of temperature that usually occurs in the early or middle period of the disease, after removal of the patient from one place to another. This rise is undoubtedly due to exhaustion, and may require stimulants. Second, occasionally idiosyncrasies exist, in which it is impossible to use antipyretics without bringing on symptoms of serious depression. Third, during the later stages of typhoid fever, after the true typhoid process is ended. At this period the fever is due to exhaustion, and requires stimulation, and the administration of antipyretics may prove dangerous.

**The Treatment of Vulvo-Vaginitis in Young Girls.** (*Revue des Maladies de l'Enfance*, January, 1892.)—M. Cronby, in an address before the Medical Society of the hospitals, highly recommends washes, used two or three times a day, containing either hydrargyrum bichloride, one in two thousand, or boric acid in a four-per-cent. solution, followed by dusting the vulva with salol ; sulphurous baths were also recommended, three or four times a week. In cases of vaginitis he recommended the introduction into the vagina of small pencils, three millimetres in diameter, containing one gramme of cacao butter with ten centigrammes of salol, two or three times a week, according to the severity of the discharge.

**Europhen in the Treatment of Diseases of the Throat and Nose.** (*New York Medical Record*, April 23, 1892.) By W. F. Chappell, M.D.—The writer recommends very strongly europhen as a remedy of much value in disease of these parts. He has been very successful with it in the treat-

ment of rhinitis foetida. The improvement noted has exceeded anything he has obtained from other methods. The parts should first be cleansed with a half-per-cent. solution of creolin, and then by means of a small powder-blower thoroughly covered with the euophen. This should be repeated every morning, and the patient directed to use an ointment at night, consisting of two drachms of euophen to an ounce of vaseline, applied with a camel's-hair brush inside the nostrils. A watery discharge is excited, with much benefit to the local conditions. It promises also to be of much value after operations in the throat and nose on account of its hæmostatic and antiseptic properties. Euophen is an amorphous, light-yellow powder with very slight odor, soluble in alcohol, ether, and all the fixed oils. It may be used either in powder form or in solution.

**Restoration from Syncope produced by Chloroform.** (*Die Methode der Wiederbelebung bei Herztod nach Chloroformeinathemzug. Berliner klinische Wochenschrift*, March 21, 1892; *British Medical Journal*, April 9, 1892.) By Maas.—The writer thus describes a modification of König's method of intermittent compression of the cardiac region. Standing on the left side of and facing towards the head of the patient, the anæsthetist places his right hand upon the præcordium and compresses it with rapid and forcible movements, at the rate of one hundred and twenty or more a minute. This is made easier if the left hand grasps the other side of the chest. The effect produced is estimated by the carotid pulse thus produced, and by contraction of the pupil. Somebody should stand at the patient's head to keep the mouth and air-passages free. There should be as few pauses as possible if the patient's condition is not improving. The author relates two cases wherein over an hour from the beginning of the syncope the patient began to revive and slowly recovered. The writer remarks that according to previous experience both these patients must have been looked upon as lost. It would appear from this that in this method we have a distinct advance in our means of resuscitation.

**Hydrastinine in the Treatment of Uterine Hemorrhages.** (*Berliner klinische Wochenschrift*, January 18, 1892.)—Dr. Abel speaks very highly of the value of hypodermic injections of hydrastinine in the various forms of uterine hemorrhage. He made use of a ten-per-cent. aqueous solution of the hydrochlorate of hydrastinine, of which he administered at each injection from fifty centigrammes to a gramme on the lateral parts of the abdominal wall. The injections give rise to a burning sensation, and sometimes to an ecchymosis and an induration, which pass away slowly.

In menorrhagias, either simple or ovarian, a daily injection of fifty centigrammes was given during the week preceding menstruation, while twice that amount was given daily during menstruation. If this produces distinct amelioration, a weekly injection is given during the intervening period. In general two or three months are required to effect a cure.



This treatment also proved of some benefit in cases of fungous endometritis and glandular hyperplasia, but in uterine myomata the results were not superior to those of ergotine. In menorrhagias due to pyosalpinx and chronic parametritis, the action of the hydrastinine was variable, and produced sometimes amelioration, sometimes aggravation. Three cases of hemorrhage during pregnancy were relieved after from three to six injections, and were not followed by miscarriage, indicating that hydrastinine is not an abortifacient. Dr. Abel concludes that hydrastinine, used hypodermically, is the most efficacious of our remedies in uterine hemorrhage, but its action is slow, and therefore not serviceable in urgent cases.

Czemfin (*Centralblatt für Gynaekologie*, No. 45, 1891) also reports its trial in fifty-two cases. In more than half of these the hæmostatic action of the drug was marked. It is supposed to have an action on the blood-vessels of the endometrium.

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## NEUROLOGY.

IN CHARGE OF B. SACHS, M.D.,

Professor of Mental and Nervous Diseases in the New York Polyclinic; Neurologist to the Montefiore Home for Chronic Invalids; Consulting Neurologist to the Italian Home of New York City.

**The Frequency of Locomotor Ataxia in Negroes.** (*Journal of Nervous and Mental Diseases*, April, 1892, p. 278.)—Dr. C. W. Burr has collected the opinions of physicians in Cuba, the Southern States, and Philadelphia on this subject. Among thirty-eight active practitioners in Cuba, only eight cases have been observed in the full-blooded negro. One who in twenty-seven years has had twenty plantations under his care has never seen a case. The writer has never seen a case in a pure black, although he gives the history of a mulatto who presented this condition. In conclusion he remarks that, while the data given are not sufficient to permit one to say dogmatically that locomotor ataxia is a rare disease among negroes, still it is sufficient to permit one to hold such an opinion tentatively until further investigation disproves it.

**Reflex Headache.** (*Medical and Surgical Reporter*, May 7, 1892, p. 727.)—Dr. F. H. Edsall thinks that he is warranted, both by personal experience and by the statistics on the subject, in believing that the majority of recurring or persistent headaches are reflex in character, due to some abnormality in the refractive state of the patient's eyes or to an improper balance between the sets of muscles which regulate the motions of the eyes.

The signs which are generally recognized as evidence of some eye-defect, and should give rise to a careful examination with the proper instruments, are: increased headache after the eyes are used; headache only after using the eyes, or pain localized about the temporal or frontal regions; or, again, if the eyes become reddened easily or the patient grows sleepy over an interesting book.

Correction of the refractive error by the proper glasses will usually give marked and quick relief.

The Spinal Column in the Infant. (*Edinburgh Medical Journal*, April, 1892, p. 913.)—Dr. J. W. Ballantyne makes some statements respecting the measurements, curves, ossification, etc., of the infant's spine, based upon the study (by the frozen sectional method) of a six and a half, a seven and a half, and an eight and a half months' foetus, and of two full-time infants, and upon the examination of the skeletons of four foetuses and infants, and the dissection of several fresh specimens.

The general conclusions at which he has arrived will be of interest to those who are studying the causation of spinal disease in early life:

1. The total length of the body of the infant at birth is about two and a half times that of the spine. This is due not so much to the lower limbs, which are relatively short, but to the head, which is large at this time of life.

2. In the case of premature infants (six or eight months' foetuses) the cervical and lumbar regions of the spine are practically equal in length; but in well-developed, full-time infants the lumbar part of the vertebral column is longer than the cervical, although not so much longer, as it is in adult life, when the lumbar spine is to the cervical as three to two. (In the infant the proportion is approximately as five to four.

3. In the infant the spine is very flexible, and this flexibility is due not only to the imperfectly ossified condition of its segments, but also to the weak muscular condition at this age.

4. There are no fixed curves in the infant's spine save that caused by the slight projection of the sacral promontory; those that are seen in frozen sections are due to the position of the body during freezing, and vary with the changes which the position may undergo.

5. While there are no fixed curves in the spinal column in the infant, a general curvation of the spine above the sacral promontory usually exists (as it does also in foetal life), and this has an anterior concavity (kyphosis).

6. If the bones be unusually soft and the muscles weak (as in rickets), and also if the infant be encouraged to sit up at too early an age, this natural and temporary infantile kyphosis may become pathological and permanent. Under similar conditions other wrong curvatures of the spine may also be produced.

7. In the new-born infant the characters of the facets of the occipito-atlantoid articulations are not such as to permit of safe and extensive movements.

Spinal Concussion in its Relation to Nervous and Mental Disease. (*New England Medical Monthly*, March, 1892, p. 247.)

Dr. Edward C. Mann, F.S.S., considers that no injury to the spine, however slight, is too trivial to be overlooked, as the cord may be either



functionally disturbed or even organically diseased from any and all such shocks and injuries. The symptoms may be immediate or they may develop slowly after an interval of some months. There is, of necessity, a great variety as to the extent and relative amount of paralysis of motion or loss of sensation in any given case.

1. In an apparently slight case of spinal injury there may be an unsuspected fracture of one of the vertebræ, unaccompanied with paralysis, and death occur suddenly from an accidental movement.

2. Fatal injuries to the spine may be caused by a blow on the head.

3. A spinal meningitis may develop slowly from a direct injury to the back or head and terminate fatally. The paralytic symptoms may develop slowly.

4. Immediate paralysis may follow concussion of the spine and yet complete recovery result.

5. Hyperæsthesia, anæsthesia, pain, and perverted sensations of all sorts or paralysis of one limb only may follow spinal injury.

6. Low temperature is the rule in spinal injuries, a high temperature, when it occurs, is indication of some inflammatory process.

7. After such injuries there may result : complete recovery, incomplete recovery, permanent disease of the spinal cord, and meningitis, or, finally, death.

8. A fatal result is due either to hemorrhage, laceration, extravasation, or to inflammatory softening,—two or more combined.

**Multiple Abscesses of the Brain.** (*Dublin Journal of Medical Science*, March, 1892, p. 194.)—Dr. Alfred R. Parsons relates the history and *post-mortem* examination of an interesting case. At autopsies, it is frequently a matter of surprise to find extensive cerebral lesions which during the life of the patient gave no distinct focal manifestation of their presence.

Abscesses of the brain may arise from one of two causes : either local or secondary to suppuration elsewhere. Of these local causes, injury and disease of the ear are the most potent factors in producing abscesses, which are almost invariably single. Morbid processes in distant parts of the body, from which septic matter finds its way into the circulation, are responsible for a large proportion of the cases in which the abscesses are multiple. The writer mentions, also, a curious group of cases of cerebral abscess secondary to suppuration elsewhere, but which present none of the symptoms of pyæmia, and after death a most careful examination fails to disclose any metastatic abscesses except those in the brain.

The case reported by Dr. Parsons was not completely examined after death. The head alone could be explored. Eight abscesses were found scattered through different parts of the brain without any direct anatomical relationship with the ear-disease or with each other. A double purulent otorrhœa existed in this case. From the similar character which they presented there can be little doubt that they were secondary to suppuration elsewhere, and that the infection was conveyed by either the blood-vessels

or lymphatics, most probably by the former. After carefully weighing the symptoms and all the evidence offered by the examination of this case, the writer believes that the chronic otitis media was responsible for the abscesses.

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## PEDIATRICS.

IN CHARGE OF F. FORCHHEIMER, M.D.,

Professor of Physiology and Clinical Diseases of Children, Medical College of Ohio, etc.

Scarlatinal Nephritis. (*Archives of Pediatrics*, April, 1892, p. 241.)  
By Dr. J. Lewis Smith.

This very common complication of scarlet fever usually begins during convalescence in mild as well as in severe cases, sometimes with but little effect upon the child's condition, and in others, altering the prognosis very considerably, causing death in cases which seemed to be favorable prior to its occurrence. The appearance of albumen in the urine is more common in some epidemics than in others. Dr. Welch writes, "Whether the genuine scarlatinal glomerulo-nephritis is caused by the specific virus of scarlatina or by some complicating secondary organism is not settled." By the observance of judicious treatment many cases recover which would inevitably perish by improper measures. The family should be informed that the danger from scarlet fever does not cease with the decline of the eruption, and that the kidneys may become seriously affected when the patient is in other respects convalescent. Whether the microbic theory for the origin of the disease or the catching cold theory be accepted, exposure must be carefully guarded against, and thus the cases of nephritis after mild attacks of scarlet fever prevented if possible.

The best treatment consists in keeping the patient in bed during the attack, however mild it may be, in a warm room for three or four weeks until desquamation is entirely completed. No patient should be discharged from treatment without some provision being made for careful examination of the urine, frequently repeated in order to detect the first trace of albumen. Early and correct treatment of the nephritis is the most likely to be successful. As soon as this symptom develops the patient should be put to bed in a warm room at an even temperature of 72° to 75° F. The diet should be liquid, such as milk, farinaceous food, and moderate quantities of animal broth. Liquids may be given freely. Prostration should be met by alcoholic stimulants. The hyperæmic condition of the kidneys should be controlled by diaphoresis and purgation. For the former a warm bath should be employed at a temperature of 98° to 100° F. After the bath the child should be placed in a warm bed and well covered with blankets. A free perspiration should result. If this is not obtained the body may be surrounded by hot air, either dry or moist. A useful diaphoretic, diuretic, and laxative prescription is the following:



R Potassii acetatis,  
 Potassii bicarbonatis,  
 Potassii citratis, āā ʒii;  
 Infus. tritici repentis, ʒviii.—M.

Dose.—Give one teaspoonful every three or four hours to a child of five years.

The use of pilocarpine when other remedies have failed is often of great value. The alcoholic stimulants should be increased at the time of its employment to avoid any depressing effects. To a child of two years the one-fortieth to the one-twentieth of a grain should be given by the mouth, or it may be given hypodermically in a one-twentieth of a grain dose to a child of five. The writer believes that this drug has both a diuretic and a diaphoretic action, and it stimulates not only the salivary but also the mucous secretions. Several cases are mentioned confirming the usefulness of the drug. Digitalis may be used from the beginning of the disease. One teaspoonful of the infusion in combination with the acetate of potassium may be given every third hour to a child of five years. Local treatment furnishes important aid in subduing the nephritis. A slightly irritating poultice constantly worn over the kidneys as long as the albuminuria is present should be employed. For this purpose equal parts of pulverized flaxseed and ginger, or one part pulverized mustard and sixteen of flaxseed, thoroughly mixed with sufficient water to moisten the cloth, may be used. Older children, not easily frightened, may be treated by dry cups, or where the symptoms are less alarming, mildly irritating plasters may be employed.

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## SURGERY.

IN CHARGE OF B. FARQUHAR CURTIS, M.D.,

Surgeon to St. Luke's Hospital and to the New York Cancer Hospital.

**Gunshot Wounds of the Spinal Cord.** (Des plaies par coup de feu de la moëlle épinière. *Revue de chirurgie*, 1892, p. 89.)

The mortality of gunshot fractures of the vertebral column varies from fifty-six to ninety-three per cent. in different statistics. Vincent collected thirty cases from literature, making with three of his own thirty-three cases of gunshot wounds of the spinal cord, with a mortality of sixty-seven per cent., but of the eleven cases which recovered five had partial paralysis, one weakness of the lower extremities, one anæsthesia, and another various difficulties. Five cases recovered without surgical operations, five with operation. Three died after operation, and twenty without it.

In considering the surgical treatment of this injury we may make three classes of cases.

*First.* Cases with compression of the cord by blood, by a fragment of bone, or by the projectile, lying outside of the spinal canal. These are the

most favorable cases, and include the five successful operations in Vincent's list, with only one case resulting in death after operation.

*Second.* Cases of wound of the cord, the projectile passing out of the spinal canal again. Although there is no indication for operation in such cases, it will often be impossible to recognize them, and exploratory operations are therefore permissible. Vincent has no cases of this kind in his list.

*Third.* Cases in which the projectile lodges in the bone and encroaches on the spinal canal, or lies entirely within the latter. The ball is found in the spinal canal much more frequently than would be supposed,—nine times in Vincent's thirty-three cases, and it almost invariably entirely destroys the cord at that point. Vincent operated twice in such cases and considers operation justifiable, because it is often impossible to tell without operation how much damage has been done, and because foreign bodies are badly borne by the spinal cord, and should be removed to avoid myelitis.

Vincent's three cases are as follows :

CASE I.—Man, thirty-one years old, wounded by a revolver, fracture of first lumbar vertebra, partial paralysis of lower limbs, paralysis of bladder and rectum. Operation next day, fragments of bone and pieces of lead removed, no injury to cord, considerable immediate improvement of the paralysis, receding with the development of a myelitis which lasted one week, but rapidly returning afterwards. In one month he walked with crutches, and in two without support. The catheter was unnecessary in three weeks, the wound healed primarily.

CASE II.—Man, eighteen years of age, shot with revolver, fracture of lamina of tenth dorsal vertebra, complete sensory and motor paralysis below. Operation on third day, entire ball found in spinal canal, also a fragment of bone, both removed. Very slight improvement the following day. On the sixth day patient was removed from hospital, left without use of catheter, and died two days later. Autopsy showed a crush of the cord through its entire thickness, with softening and suppuration.

CASE III.—Man, thirty-seven years of age, shot with revolver, fracture of lamina of eleventh dorsal vertebra, complete paralysis below. Operation on third day, ball and a large bony fragment removed from the vertebral canal. The wound did well, and there was considerable improvement from the third day after the operation, but symptoms of myelitis were evident in three weeks, and the patient succumbed three months after the accident.

**Intracranial Neurectomy.** (*New York Medical Journal*, March 19, 1892.)

In connection with the recent English papers on the surgical treatment of neuralgia of the fifth nerve, the case of Hartley is of great interest. A man forty-six years of age had had neuralgia for nine years, and had undergone two previous neurectomies of the infra-orbital and the inferior dental nerves without relief. Hartley made an omega ( $\Omega$ ) incision, its base at the zygoma, the convexity three inches above, the incision penetrating to the periosteum except at the base. The periosteum was divided on the same line and a groove was cut in the bone down to the inner table, this groove being made to penetrate the bone at the height of the convexity. The flap of bone thus marked out was broken (outward) by an elevator, and, its base



also giving way, the flap could be thrown down with the soft parts as if on a hinge. The middle meningeal artery was tied. The dura mater was then raised from the base of the skull and held up (together with the brain) by broad retractors, giving a very good view of the Gasserian ganglion. The second and third divisions were isolated and divided at the foramen rotundum and the foramen ovale, and also behind the ganglion, and were removed. The third, fourth, and sixth nerves were accidentally injured. The flap of bone and soft parts were replaced, the oblique edge of the bone supporting it, and the wound was sutured. The operation took one hour and forty minutes. A good recovery followed, and five months later the man remained free from pain. The paralysis of the minor nerves injured was only temporary.

**Operations upon the Cæcum.** (Beiträge zur Pathologie und chirurgischen Therapie chronischer Cæcumerkrankungen. *Archiv für klin. Chirurgie*, 1892, xliii. 101.)

Salzer believes that the surgery of the cæcum should be studied apart from ordinary intestinal surgery because of the peculiar arrangement of the peritoneum at this point, the difference in calibre of the two portions of the bowel at the ileo-cæcal valve, and the fixation of the large as contrasted with the mobility of the small intestine, all of which add to the difficulty of obtaining good results.

He reports twenty-five cases of operations upon the cæcum for chronic disease at Billroth's clinic, including four cases of suture of fistulous openings, three of anastomosis, and eighteen of resection with circular suture. In the first group the results were poor,—one death, one cure, two relapsed. The anastomoses were made for old perityphlitic adhesions, for tuberculous disease, and for carcinoma. The first case was one of extensive fistula-formation after old perityphlitis, in which the intestine was divided above and below, the ends united by circular suture, and the intervening portion closed (it should, perhaps, rather be included in the cases of resection and circular suture), which resulted fatally from peritonitis. The others, both cases of lateral anastomosis, recovered.

Of the eighteen resections eight died, eight were cured, and two unimproved. The operation was undertaken for carcinoma in ten cases, of which six died; for tuberculous disease and for fistulæ, each in four cases, and each with one death. The greater mortality of the operations done for malignant disease is evident. It is worthy of note that in none of the cases of malignant disease had the symptoms been at all marked or of long duration, while the opposite was true of those cases of tuberculous disease which formed tumors in the cæcal region resembling neoplasms,—a fact which might be of assistance in settling the diagnosis.

Salzer believes that the importance of the technique in its influence upon the results is indicated by the fact that there were five deaths in the first nine cases of resection, and only three in the second nine cases. The chief

points in the technique as carried out at Billroth's clinic are : first, the end to end union of the bowel, the ileum being cut obliquely to fit the large intestine, and the latter still further reduced in size, if necessary, by sewing up part of its lumen (as is done with the stomach in pylorectomy) before uniting the ends ; secondly, careful adjustment and suture of the mesentery to prevent kinking of the ileum where it is joined to the colon ; thirdly, temporary drainage or iodoform gauze tamponade of the wound, especially when there are any raw surfaces exposed in the peritoneal cavity, or where it has been impossible to obtain perfectly healthy peritoneum around the ends of the bowel at the point of suture ; fourthly, the addition of tension sutures outside of the usual rows in uniting the end of the bowel.

**Volvulus of the Sigmoid Flexure.** (Ueber die operative Behandlung der Axendrehung der Flexura sigmoidea. *Archiv für klin. Chirurgie*, 1892, xliii. 164.)

Braun reports three cases of laparotomy for volvulus of the sigmoid flexure,—one with resection and formation of an artificial anus, which recovered ; and two of reduction, one of which died. With other cases from the literature he studies the subject on a basis of thirty-one cases, eight treated by enterostomy simply (all fatal), and the rest by laparotomy. Of seventeen cases in which the reduction was successful six were cured, two of the fatal cases dying of relapses. Of the two cases in which the flexure was resected one recovered, the other died of perforation of an ulcer of the stomach.

Braun thinks the diagnosis can often be made. There is usually a history of constipation, and the attack frequently follows a blow or strain. Volvulus is most frequent in men and in late life. Palpation often reveals a distinct tumor or distended coil of bowel, and there is often free fluid in the abdomen. Vomiting is often absent and very seldom feculent. The treatment should be immediate laparotomy so soon as attempts to reduce the twisting with high enemata and manipulation have failed. If there is great distention of the abdomen it may be well to first do an enterotomy and postpone the severer operation a few hours until the distention has been relieved. It is advisable, after reduction, to secure the elongated flexure by a few sutures passed through its mesentery so that it cannot resume its faulty position. Senn's suggestion to shorten the mesentery by a fold would, probably, not answer in most cases, as the two loops of the bowel are so close together, the mesentery being generally long and narrow. If gangrene has already occurred it will be best to resect the entire flexure at once and secure the ends in the wound, the artificial anus thus made being closed at a later operation.

**Transplantation of Skin by Wolfe's Method.** (*British Medical Journal*, 1892, i. 803.)

Wolfe's method of skin transplantation, which consists in dissecting up



a flap of skin, cutting away from its under side all fat and connective tissue, and transplanting it into a distant place, has rather been lost sight of since Thiersch's method has (deservedly) become so popular. Yet it has one great advantage over the Thiersch method, in that it gives a covering of true skin, while the latter is semi-cicatricial. Ceci reports seven cases treated by this method, in only one of which did the flap die. One example will suffice: an epithelial ulcer was excised from the temple, leaving a wound eight and a half by seven and two-tenths centimetres. Four days later a strip of skin was removed from the outside of the arm four and a half by seventeen centimetres, and applied to the wound in pieces, so as to cover it entirely. The dissection of this flap required *one hour and a half*. No sutures were applied to hold the grafts in place, but the wound in the arm was sutured. The tediousness of the dissection of the skin-flap is certainly against the method.

**An Enormous Congenital Umbilical Hernia without Cutaneous Covering; Operation; Recovery.** (*Medical Record*, 1892, i. 263.)

A child delivered by Benedict was found to have a lack of development in the abdominal wall, resulting in leaving a circle in the umbilical region four inches in diameter with no covering but the peritoneum. The cord was tied in the usual way, and two days later the skin was divided circularly just beyond the circumference of this opening, dissected up to free it and then united in a straight line with hare-lip pins and figure-of-eight sutures. Union was secured, and three weeks later the cicatrix was firm and the child in good health. [Similar cases have been reported by Felsenreich (*Wien. med. Presse*, 1883, No. 17), Dunlap (*Jour. Amer. Med. Asso.*, 1888, i. 50), Barton (*Med. News*, 1889, ii. 137), Hinkson (*New York Med. Jour.*, 1891, i. 586), and Salmon (*Gaz. des hôpitaux*, 1891, p. 1219), and all of these recovered, although most of them were operated upon on the day of birth.—C.]

**Resection of the Larynx and Œsophagus, with Plastic Restoration of Latter.** (Totale Kehlkopf-Exstirpation und Resection des Œsophagus wegen Carcinoma laryngis. Œsophagoplastik. Ein neuer Sprechapparat. *Wiener klin. Wochenschr.*, 1892, p. 123.)

Hochenegg reports the case of a man, fifty-one years of age, from whom he removed the entire larynx and the œsophagus for an extent equal to the width of four fingers, except a narrow strip of mucous membrane one centimetre wide. The disease was carcinoma, and extensive glandular infection was also present, as well as growth by contiguity into the thyroid, compelling the removal of one lobe of that gland. When the wound healed the œsophagus opened in the neck just above the tracheal opening, and a narrow strip of mucous membrane connected it with the opening into the pharynx above. A flap of skin was taken from the right side of the neck, with its base towards the middle line near the strip of mucous membrane, and was

turned inwards so as to make the inner lining of the new portion of the œsophagus, and the raw outside surface of this flap was covered by Thiersch skin-grafts. The greater part of the grafts died, and several fistulæ formed, partly as the result of the great disturbance excited by the stomach-tube left *in situ*, necessitating feeding by a tube introduced at intervals instead. A small secondary operation closed the fistulæ and covered the raw surfaces with a flap from the left side of the neck.

Hochenegg then determined to restore speech to his patient, and hit upon the method of having a small bellows strapped to his side, so that it could be worked by the pressure of the arm, and a tube passing from it into the nostril so as to hang in the pharynx. The air was thus delivered where it could be used by the tongue and lips for articulation, and a reed inserted in the tube gave the necessary tone. The result was fairly good. This appears to be the first successful case of plastic restoration of the œsophagus on record.

**Early Operation in Osteophlebitis of the Skull.** (Zur Frage der intermediären Trepanation bei Osteophlebitis cranii. *Beiträge zur klin. Chirurgie*, 1892, viii. 522.)

Reissner advocates early operation and the removal of all infected bone in cases of septic inflammation of the cranial bones. This condition is to be suspected when a patient with an injury of the scalp develops high fever, especially with a chill, although the latter generally indicates that inflammation of the sinuses and meningitis have already set in, and that it is too late for interference. If, on inspection of the wound in such a case, the bone is found of a peculiar greenish-yellow color, the diagnosis is certain and the diseased bone should be removed,—not only the sequestrum but the bone around, as far as the veins of the diploë appear thrombosed or infiltrated with pus. It is undoubtedly wiser to remove the entire thickness of the bone, for sometimes pus has been found between the skull and the dura mater. The chisel should be employed in this operation, and great care taken not to break up and disseminate farther the infected clots in the veins. Recovery has been obtained even where the chill has been observed and in spite of metastatic abscesses, but the operation should be performed before the chill if possible.

**Diverticula of the Cœsophagus.** (Ueber den Cœsophagusdivertikel und seine Behandlung. *Archiv für klin. Chirurgie*, 1892, xliii. 1.)

Von Bergmann reports a case of diverticulum of the œsophagus treated by extirpation with success. The patient was a woman, thirty-eight years of age, and her symptoms had been troublesome for four or five years, finally rendering swallowing almost an impossibility. The operation was made through the ordinary œsophagotomy incision, the diverticulum found, and a sound passed into it, after which it was dissected out and cut away,



the opening on the posterior wall of the œsophagus closed by sutures, and the greater part of the external wound left open and packed. The œsophageal wound did not close entirely, and a fistula persisted for four months, and broke open again for a short time four months later. Although this patient had formerly a congenital cervical fistula, Von Bergmann does not accept as proved the theory that these diverticula are due to congenital malformation, for they are nearly always found in the middle line on the posterior wall near the beginning of the œsophagus,—a situation which cannot well be brought into connection with any known variety of congenital fistula. Nor does he accept the theory of an analogy with the pharyngeal diverticula found normally in some animals, as these are never found below the commencement of the œsophagus. The whole matter requires more facts before it can be decided. Of course these remarks apply only to the genuine diverticula and not to the little pockets due to the inflammation and subsequent atrophy of neighboring glands which burst into or become adherent to the walls of the œsophagus and then form a diverticulum by traction upon it. As to treatment, only one case is on record of a cure by persistent passage of the sound, and this case of Von Bergmann seems to be the first one treated by extirpation.

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## GENITO-URINARY SURGERY.

IN CHARGE OF WILLIAM K. OTIS, M.D.,  
New York.

Some Differential Points in the Diagnosis of Syphilis and Tuberculosis, with Illustrative Cases. (*Journal of Cutaneous and Genito-Urinary Diseases*, April, 1892.) By Prince A. Morrow, M.D.

In this interesting article the author gives the following points for differential diagnosis between syphilitic and tubercular disease of the testicle:

1. The seat of syphilitic sarcocele is essentially testicular, in a majority of cases the epididymis escapes or is only incidentally involved in the infiltration; the primary seat of tubercular infiltration is always in the epididymis, the body of the testis being secondarily involved.

2. In syphilitic sarcocele the ovoid form of the testicle is preserved. Hyperplastic infiltration of the connective tissue may be general or partial, presenting in the form of indurated plaques of cartilaginous hardness which cap the body of the testis like a shell. These vary in area and thickness, and may be associated with hard nodular deposits upon the surface or in the body of the testicles which form knobby protuberances. The tubercular testis is increased in size, hard, irregularly nodular or lumpy.

3. In syphilis there is but slight tendency to degeneration or breaking down of the gummous nodules; in tuberculosis there is a more marked

tendency to suppurative changes, the formation of abscesses and fistulous tracts.

4. Syphilitic fungus of the testicle is comparatively rare; it is characterized by the discharge of gummous material and disintegrated tubules, with more or less abundant granulations which bleed easily, but no sinuses. Fungus of the tubercular testis is also rare; the granulations are pale and soft, with numerous sinuses leading into the testicle.

5. In syphilis of the testicle the cord, seminal vesicles, and prostate are not involved. In tuberculosis of the testis these organs are almost invariably implicated. Heiberg's statistics show that in thirteen cases of primary tuberculosis the seminal vesicles were involved in eight cases, the prostate in eleven; in twenty-three secondary cases, the seminal vesicles were affected in fourteen cases, the prostate in fifteen.

6. Hydrocele is almost constantly associated with syphilis of the testicle; in tuberculosis of the testis in not more than one-third of the cases.

7. In both forms the development is slow and insidious, the diseased organ is insensitive, and the entire process is indolent and aphlegmasic.

One Hundred Operations for Stone in the Bladder. (Hundert Blasenstein-Operationen. *Wiener klinische Wochenschrift*, April 28, 1892.) By Hofrath v. Dittel.—This report of one hundred operations for vesical calculus, additional to six hundred already published by Professor Dittel in 1890, has an important bearing upon what is a somewhat vexed question among surgeons at the present time,—the choice of operation for stone.

Of this last series of operations three were by median section, sixty-seven by litholapaxy, and thirty by the suprapubic section. Of the median sections only one case proved fatal, and this was not unexpected, as the patient was suffering from diphtheritic gangrene of the bladder at the time of operation. Among the sixty-eight cases of litholapaxy there was but one death, a mortality of only one and four-tenths per cent.; while in the thirty epicystotomies there were six deaths, a mortality of twenty per cent., for which, however, great allowance should be made when we consider the conditions present as disclosed at the autopsies.

The first of these cases died of diffuse purulent peritonitis emanating from a septic focus in the prostate, death being in no way connected with the operation. The second succumbed to diphtheritic nephritis following severe chronic cystopyelitis. In the third, death was probably not due to the operation but to a chronic nephritis, fatty heart with hypertrophy of the left ventricle, and chronic cerebral endarteritis. Vitality was so much depressed in the fourth case that the chloroform was discontinued and the operation finished under the influence of subcutaneous injections of cocaine, the high operation in this instance being chosen in order to remove the foreign body as rapidly as possible, and the hemorrhage was then checked by tampons of iodoform gauze; but the patient died of heart-failure, the autopsy demonstrating, in addition to the hemorrhage, organic changes in the heart. In



the fifth case the vessels of the dura mater and the cerebrum were greatly congested; there was a large amount of fat in the pericardium, while the heart was enlarged with relaxed and atrophied walls. The patient while apparently doing well raised himself in bed and suddenly died, death not being due to the operation, as the wound was in a perfectly healthy condition.

The sixth case was one in which one hundred and twenty-eight crushings had previously been made, a large and unfavorable form of prostate rendering the introduction of instruments very difficult. In three sittings, which were made with the lithotrite and evacuator, on each occasion superficial lesions were produced in the prostatic urethra. The patient died of septic nephritis due to the injury of the prostate by the lithotriptic instruments. So that in reality only one death, or a mortality of three per cent., should be attributed to the operation in these cases.

Professor Dittel (as do all surgeons who have had great experience in the surgical treatment of stone) favors litholapaxy whenever it can be performed, and gives as contra-indications:

1. If the stone is too large to be grasped by the lithotrite or too hard to be crushed by a hammer.
2. When the removal of the stone becomes imperative and at the same time strictures surrounded for a long distance by callus exist in the urethra.
3. When there is stricture of the urethra complicated by fistulæ.
4. Large prostates, when there is an intention of performing prostatectomy.
5. Severe purulent cystitis.
6. Severe hemorrhagic cystitis.
7. The existence of "pipe stones" causing incontinence. [When the nucleus of the stone is a foreign body incapable of being crushed.—REV.]
8. The youth of the patient.
9. Recurrences after litholapaxy.
10. Encysted stones.
11. Severe purulent pyelitis.

Litholapaxy is rarely attended by serious complications, and has the great advantage of a short convalescence, the patient being able to resume his occupation in from seven to ten days, while the duration of the healing process after suprapubic section is at least four or five weeks. Suprapubic cystotomy, however, is an operation which can be taught on the cadaver and learned perfectly under the direction of an instructor, while in lithotripsy personal experience and practice are necessary. Litholapaxy is therefore by far the most difficult operation, and in all probability the surgeon inexperienced in this method will obtain better results from the high operation.

Improved Electro-Urethroscopic Instruments and their Use. (Die Verbesserungen des Elektro-Urethroskopischen Instrumentariums und des-

sen Anwendung.) By Dr. Oberländer, Dresden.—In this article the author gives a detailed description of the urethroscope which he is using at the present time, which is an exceedingly complicated and expensive instrument, being a modification of the one devised by Nitze in 1879. It consists of a tube about one-eighth of an inch in diameter, at the distal end of which a small platinum loop is placed in such a manner that it becomes incandescent upon the passage of a current of electricity, undue heat being prevented by a constant current of cold water flowing through the tube. This tube is then passed to the bottom of the ordinary urethrosopic tube, being so small that it interferes but little with the size of the field. The illumination is very brilliant, but offers the disadvantages which are always encountered when one looks from the dark into a brilliantly-lighted space.

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## ORTHOPÆDICS.

IN CHARGE OF REGINALD H. SAYRE, M.D.,

Assistant to the Chair of Orthopædic Surgery, Bellevue Hospital Medical College, New York.

Case of Spondylitis associated with marked Rotary Lateral Curvature, with Abscess; Recovery without Deformity. (*Chicago Medical Recorder*, October, 1891.)—A. E. Hoadley reports an interesting case of a boy, six and one-half years old, who presented marked rotary lateral curvature of the spine, with right dorsal convexity. There were no symptoms of Pott's disease, no pain or tenderness, nor elevation of temperature. The curve could be entirely obliterated by manipulation while traction was made on the child's head. A few days later a course of systematic exercise was begun for the cure of the lateral curvature, but in the mean while the patient had developed great tenderness and a temperature of 100° F. He was then put to bed for a month, during which time his temperature ranged from 100° to 101° F., and the tenderness continued. A plaster-of-Paris jacket was now applied and worn for a month. When it was cut off, it was seen that a large abscess had formed on the left side of the spine at the point of tenderness. Empyema had been excluded. The abscess was opened, and a probe passed between two ribs detected naked bone on the side of the body of one vertebra. Drainage was established through a silver tube, and a brace applied. Pus continued to discharge for a year and a half, in varying and constantly-diminishing quantity, the tube being removed and cleansed every second day. The deformity diminished very markedly, slight lateral deviation without rotation being now present. There seems to be ankylosis of two vertebræ.

[In looking over the history of this unique case, it seems to be a question whether this was, as Dr. Hoadley supposes, a true tubercular osteitis of the vertebræ, or whether the abscess and osteitis might not have resulted from



tearing loose some of the ligaments of the spine in the effort to remedy the lateral curvature which was at first the only apparent feature in the case.—R. H. S.]

**Elastic Extension in the Treatment of Diseases of the Joints.** (*International Journal of Surgery.*) By S. L. McCurdy, M.D.—The author holds that it is possible to separate the ends of the bones composing a joint by traction, and requests the reader to demonstrate this to his satisfaction by pulling on his finger and “observing how the skin and all soft parts drop down between the bones at the metacarpo-phalangeal articulation.” He also “desires to make the sweeping statement that elastic tension, properly used in any case of synovitis of the human anatomy, will cure it, even in the stage of suppuration, with little ankylosis or deformity.”

The essential elements of his extension apparatus are a double system of malleable steel bars, arranged parallel and secured together at the proximal ends by a collar that slides over its fellow, and from which project buttons. The distal ends are fixed points, and are secured to the affected member on either side of the diseased joint in such a way as to overreach it. By means of elastics passing over the buttons on the distal and proximal ends, any desired amount of traction is exerted on the joint. The joint is allowed motion. The author cites a number of cases to show the application of these principles. We wish we could agree with the author in the statement that “ankylosis, so frequently the result of a synovitis, is always averted under this treatment.”

**Apparatus for the Treatment of Walking Cases of Severe Injuries of the Back and Limbs.** (*Vorrichtung zur ambulanten Behandlung schwer Erkrankten Gliedmassen und Rückenknöchen. Fortschritte der Krankenpflege*, March, 1892.) Von Fr. Hessing in Gözjingen bei Augsburg.

Hessing has devised a series of steel-wire splints which are to be applied to fractures in different parts of the body. The wires are bound together so as to make a kind of cradle, and can be moulded to fit the contour of the limb. The longitudinal wires slide on each other at different points so as to permit the splint to be adapted to legs of different lengths. The wire splint is secured to the limb by broad straps and buckles. After the limb is fastened to the splint, extension and counter-extension are obtained by separating the sliding parts of the splint until the requisite traction is made, and then, by tightening the screws, the same amount of traction is maintained. In fracture of the leg the patient walks on the sole of the wire splint, the sole of the foot being a half-inch or so from the ground.

## OBSTETRICS AND GYNÆCOLOGY.

IN CHARGE OF J. M. KEATING, M.D.,

Colorado Springs, Colorado; Fellow of College of Physicians of Philadelphia; Formerly Consulting Physician for the Diseases of Women, St. Agnes's Hospital, Philadelphia; Consulting Surgeon to the Maternity Hospital; Gynæcologist to St. Joseph's Hospital; Visiting Obstetrician to the Philadelphia Hospital (Blockley), and Lecturer on the Diseases of Women and Children; Editor "Cyclopædia of the Diseases of Children," etc.

**Action and Application of the Faradic Current in Gynæcology.** (*Times and Register*, November 7, 1891). By A. H. Goelet, M.D., New York.—It is somewhat of a relief to read of the *faradic* current being used without abuse in gynæcological practice. Dr. Goelet's paper is so highly scientific that the majority of practitioners, who will probably gladly avail themselves of this form of electrical application under the author's guidance, will find it difficult to understand. Most of the article is taken up with the construction of the battery, the question of the faradic coils, the length and size of the wire used, and the construction of the vibrator or current-breaker.

The importance of a perfectly-selected coil is noticed in applications of both poles to a surface of low resistance, such as the vaginal mucous membrane: the long fine wire will give a current not only bearable but rapidly sedative; the short coarse wire secondary coils will give pain and be unbearable. If these different physical qualities are produced by differences in the coil, it is but natural to attribute to them different physiological effects.

The author dwells upon certain important points in the administration of the faradic current: when the secondary coil of fine wire is used for its sedative effect, the interruption should reach the maximum of rapidity and should be perfectly smooth and without jerk or shock; the intensity must be brought about gradually, and the current diminished in the same way.

When the short coarse wire (and Dr. Goelet advises each battery to be supplied with four or five distinct secondary coils of wire graded as to thickness and length) is used for stimulation of muscle, the interruptions must be slow. Rapidity of interruption produces a sedative effect by paralyzing the sensory nerves and relaxing the muscles; at first a tetanoid condition of muscular spasm is produced by the rapidity of the contraction, and then the muscle becomes tired out and relaxes.

The current of long fine wire coil has an effect on the vaso-motor nerves and capillary circulation, and can be used in lessening capillary congestion.

The *descending* current, the author believes, increases the vermicular movement of the blood-vessels and augments the blood-supply to a part. The *ascending* current lessens the flow by diminishing the vermicular movement. Physiologically the *negative* pole is *markedly* stimulating and irritating, and the *positive* soothing.

**Report of Fifty Laparotomies.** (*Johns Hopkins Hospital Reports*, vol. ii., Nos. 3 and 4, September, 1890.) By Howard A. Kelly, M.D.—Of



these thirty-two were upon white women and eighteen upon negresses. Rapidity of recovery and ability to resist shock are alike in both races. It may be said that, judging from these few cases, ovarian tumors are rare in negresses and cross-breeds, and myomata proportionately frequent. The author thinks it an error in asserting that fibroid tumors are frequent but comparatively harmless in negresses. Gonorrhœal salpingitis of the suppurative form is frequent in the negress.

**Tamponade of the Uterus.** (*New York Journal of Gynæcology and Obstetrics*, March, 1892.) By H. C. Coe, M.D.—The author impresses upon us that sepsis, not traumatism, is the danger to be avoided in all gynæcological treatment.

The use of the tampon may be summarized as follows :

1. To control hemorrhage for removal of benignant or malignant growth from the non-puerperal uterus, or after abortion or delivery at term.
2. To promote uterine contraction.
3. To promote healthy granulation after curetting and the removal of neoplasms.
4. To favor drainage by securing permanent dilatation of cervical canal.

**Gonorrhœal Vaginitis.** (*New York Journal of Gynæcology and Obstetrics*, March, 1892.) By Robert A. Murray, M.D.—This is a subject of great importance to the gynæcologist, as unfortunately the cultivator of wild oats, long after his atonement and reformation, is accountable for many of those disastrous conditions which bring the innocent wife to the operating table of the abdominal surgeon.

Acute gonorrhœal vaginitis, untreated, brings endometritis, catarrhal or purulent salpingitis, pelvic or general peritonitis, adhesions, and exudations. The nearer to menstruation the quicker and the more sure will be the endometritis, and a unilateral pelvic peritonitis with salpingitis of gonorrhœal origin will become bilateral after a menstrual period. The patient should remain in bed and be given salol and an alkali to relieve the pain of micturition and also help to destroy the urethral trouble. The outside parts should be bathed in a one to five thousand solution of corrosive sublimate (a one-grain tablet in ten ounces of hot water), and these parts thoroughly bathed afterwards. Then inject the same into the vagina three or four times daily for the first two days. Then reduce to one in ten thousand, or, if much tenderness exists, to one in twenty thousand; replaced, if much pain, by a one in one hundred solution of carbolic acid. Recumbent position always. By the third day use the speculum, and swab cervix with bichloride solution or strong carbolic acid and dust with iodoform after cleansing vaginal canal; as soon as speculum ceases to cause pain, paint cervix and vagina with a five-per-cent. solution of nitrate of silver, and tampon vagina with iodoform or weak bichloride gauze, the ends brought down to outlet, and the dressing changed every two days for a week or ten days. Examine by pressure Bartholinus's glands before pro-

nouncing a cure, and, if pus exudes, open by small incision, cauterize with carbolic acid under cocaine, and dress with iodoform gauze. Examine cervix, and if necessary (purulent discharge) curette the Nabothian glands, cauterize as above, and pack around cervix with iodoform gauze. Bumm has claimed that in some cases the upper vagina and cervix are infected first; in such cases, when corporal endometritic involvement is noted and in the absence of marked parametritic trouble, the above active treatment, even preceded by the use of the blunt curette, is indicated.

In discussing this paper, Dr. Polk advocated etherization, thorough dilatation of the uterine canal, washing out the uterus with a bichloride solution, and packing it with gauze, as Dr. Murray does the vagina, believing that a certain amount of endometritis is coincident with nearly all such cases. By thus meeting at the gate (to the inside of the uterus) gonorrhœal and puerperal sepsis, tubal and pelvic inflammations can be avoided.

**Drainage of the Uterus in Chronic Endometritis and Metritis with and without Salpingitis.** (*New York Journal of Gynæcology and Obstetrics*, March 18, 1892.) By W. A. Polk, M.D.—In the discussion of this interesting paper, which was printed in full in the February number of the journal quoted, Dr. T. A. Emmet remarked that he could not understand how a chronic inflammation could exist in the lining membrane above the internal os while the woman was menstruating. He no longer even made an application or put a sound into a uterine canal unless there was some new growth or something positive connected with parturition. He agreed with Dr. Polk's plan when there were pus-tubes, and drainage through the uterus was desired. He could not imagine a woman who had ever borne a child having a condition of the lining membrane above the internal os which would require direct treatment unless there was a new growth.

Dr. Garrigues thought the use of bichloride of mercury within the uterus was attended by some danger, and advocated creolin one per cent. It is a non-poisonous antiseptic, and has some hæmostatic properties.

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## OPHTHALMOLOGY AND OTOTOLOGY.

IN CHARGE OF J. E. HARPER, A.M., M.D.,

Chicago, Illinois.

**Anomalies of Retinal Veins.**—Sidney Stevenson, M.B., F.R.C.S. Edin. (*London Lancet*, January 30, 1892), reports and illustrates cases of congenital anomalies of the retinal veins. He divides anomalies into three classes.

1. Where two primary veins are connected by a cross branch or where a branch connects a central with an aberrant vein.



2. Where a vein bifurcates while on its way to the centre of the disk.
3. Where a venous anastomosis is formed upon the disk itself.

No systemic abnormality has been found associated with this anomalous venous arrangement. Ten cases of anomalies of the retinal veins have been reported previously, two of them by Mr. Stevenson, who now adds six more. In all reported cases the anomalous condition was limited to one eye.

**Retinal Blood-Vessels.**—The *London Lancet* (January 30, 1892) contains the following abstract of Dr. James Musgrove's article on preparing retinal blood-vessels for demonstration,—which was published in the *Journal of Anatomy and Physiology*: "As much as possible of orbital fat and tissue should be removed with the eyeball, and the vessels are to be cut far back. The injection is made through the ophthalmic artery with a hand syringe, and the eye should be kept in hot water for half an hour before the injection is made. When the injection is completed the eye is allowed to cool for two or three hours to allow the gelatin in the injection to set. The entire retina is then removed by cutting through the cornea and iris and removing the lens and vitreous. The retina is then found hanging down from the optic disk, and its attachment there is divided with a knife. The entire retina may thus be freed and floated out on water, and it is then spread out, with considerable trouble it is true, on glass by means of a small camel's-hair pencil. The specimen is then dehydrated and clarified in oil of cloves, after which balsam dissolved in benzol is spread over it, and another thin lantern-slide used as a cover-glass. In this way the retinal vessels can be clearly demonstrated, and Dr. Musgrove gives a short account of their distribution, in which he found a remarkable uniformity in the different retinæ examined."

**Foreign Body in the Ear for Thirty-seven Years.**—Dr. Fred. A. A. Smith (*London Lancet*, February 13, 1892) reports the removal of a stone which had remained in the ear thirty-seven years. The membrana tympani was normal and hearing was good. The subjective noises from which the patient had suffered for six months ceased after the stone was removed.

**Hæmatoma Auris in the Insane.**—Dr. Tishkoff has examined and reported upon ten cases of hæmatoma auris occurring in patients suffering from general paralysis of the insane, in which disease it differs both clinically and pathologically from other forms of hæmatoma attacking the ear. Hæmatoma auris is due to the exposure of the cartilage of the ear to external influences, rendering it susceptible to morbid changes. It commences with inflammation of the perichondrium, which is followed by absorption of the cartilage caused by the formation of new blood-vessels. The rupture of these vessels creates a cavity between the perichondrium and the cartilage,

which increases as the flow of blood continues. The characteristic form of the hæmatoma is caused by the cavity between the cartilage and perichondrium. The blood is slowly absorbed, and the thickness of the walls of the cavity is augmented by a new growth of connective tissue. The exciting cause in the insane is generally maniacal excitement; in the healthy it is always traumatic.

**Camphorated Salol in Middle-Ear Diseases.**—Dr. Pegou (*Revue de Thérapeutique*) has reported excellent results from the use of camphorated salol in suppuration of the middle ear. Equal parts of salol and camphor are heated together until they form a liquid, which is kept in a yellow-glass, closely-stoppered bottle, as light and air decompose it readily. A pledget of cotton is soaked with it and placed in the ear, where it is kept for twenty-four hours, the ear having previously been washed with a weak boracic acid solution. The time required for a cure is from four to twenty days. The application is both painless and unirritating.

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## DISEASES OF THE LARYNX, NOSE, AND SURROUNDING STRUCTURES.

IN CHARGE OF J. PAYSON CLARK, M.D.,

Physician to the Throat Department of the Boston Dispensary; Assistant Physician for Diseases of the Throat, Massachusetts General Hospital.

**The Relation of Disturbances of the Mucous Membrane of the Upper Air-Passages to Constitutional Conditions.** (*New York Medical Journal*, March 26, 1892.)—Dr. Beverly Robinson discusses in this connection chronic tuberculosis, syphilis, scrofula, carcinoma, gout, rheumatism, lithæmia, alcoholism, etc.

The relation of laryngeal tuberculosis, when well marked, to the constitutional condition is easily recognized. On the other hand, in slight laryngeal inflammation in an anæmic subject, it is a delicate matter positively to decide the relation of the general to the local condition. In syphilis as in tuberculosis a chronic laryngitis is often greatly modified by the underlying constitutional condition. There is a deeper, more persistent coloration than in simple laryngitis; the pain is not as great as would be expected from the appearance, and specific treatment manifestly benefits the local condition. Syphilitic ulceration, if present, has a characteristic appearance. Syphilitic erythema of the pituitary membrane can be differentiated from ordinary rhinitis only by its more dusky hue and less apparent irritation.

The low grade of reaction and the duration of the affection in connection with appearances elsewhere giving evidence of the constitutional condition, determines the diagnosis of scrofulous disturbance in the regions in ques-



tion. Gout, as a complication of syphilis, causes a dryer, more glazed mucous membrane. Ulcerations heal more slowly and tend to recur, and painful deglutition is common. The cicatrices of syphilitic pharyngeal ulcers, in a scrofulous patient, are more puckered and less smooth and glistening than those characteristic of syphilis.

Malarial attacks are frequently ushered in by all the symptoms of an acute rhinitis or laryngitis, relieved by measures directed against the malaria.

Chronic alcoholism is often made evident by a congested and excessively irritable pharynx and larynx. An annoying naso-pharyngeal catarrh is occasionally very distinct proof of the process of second dentition in youth. A well-marked neurasthenic state is at times the underlying cause of a recurrent coryza. Constipation, dyspepsia, etc., react on the mucous membranes in question, and, on the other hand, a naso-pharyngeal catarrh aggravates a dyspepsia or even starts it.

**The Symptoms and Pathological Changes in the Upper Air-Passages in Influenza.** (*New York Medical Journal*, March 26, 1892.)—J. Solis-Cohen enumerates the following symptoms which may be present in influenza: Sternutation, coryza, parosmia, nasal dyspnoea, epistaxis, sore throat, dysphagia, impaired articulation, cough, expectoration (at times hemorrhagic), dysphonia, aphonia, laryngeal dyspnoea, spasm of larynx. The lesions, mainly catarrhal, giving rise to more or less of these symptoms, exist probably in about one-fourth of these cases. The pathological lesions comprise catarrh, hemorrhagic or purulent rhinitis, inflammation of the ethmoid, frontal or maxillary sinuses, acute phlegmonous and œdematoid sore throat, amygdalitis, general and lacunar inflammation of the pharyngeal or of the lingual tonsil, pseudo-membranous exudation of tonsils, palate, pharynx, tongue, and larynx; superficial œdematous, hemorrhagic, fibrinous, subglottic, purulent, and ulcerative laryngitis, abscess of larynx, simple and hemorrhagic tracheitis, submaxillary and cervical infiltration of the connective tissue with lymph.

The congestion of the mucous membrane is passive rather than active. In some laryngeal cases paresis of the muscles, chiefly the constrictors, occurs, and occasionally in the form of paralysis of the recurrent.

There is sometimes paralysis of the soft palate. In some cases there is a tumefaction resembling œdema of the mouth, palate, and pharynx. It does not pit on pressure, and contains a viscid liquid. The lymphatic apparatus seems to be chiefly affected.

The author reports two cases; one an epithelioma of the palate, part of which had been destroyed by excision and electrolysis. The rest sloughed away, and the disease was cured after an attack of influenza. The other case was one of tuberculosis of the lungs and larynx, which was also cured by an intercurrent attack of influenza.

On the Mechanism of the Closure of the Larynx. (*Lancet*, April 2, 1892.)—According to Dr. T. P. A. Stuart, the closure of the larynx is effected briefly as follows: On the one hand, by a folding up of the margins of the entrance and an obliteration of the channel of the vestibule from the entrance downward to the level of the glottis; and, on the other hand, by the well-known movement upward and forward of the entire larynx against the base of the tongue, the lower part of the epiglottis intervening but taking no active part in the process. The epiglottis does not actively move, and in deglutition, for instance, the bolus is seen to glide over its laryngeal surface, its lingual surface being closely pressed against the dorsum of the tongue. The movement of the arytenoids together and forward, as described by the author in four stages, seems to be the principal agent for closing the glottis. In birds, where the vocal function is entirely removed from the larynx, its entrance is closed by the arytenoid cartilages or bones and the thyro-arytenoid muscles.

Laryngeal Chorea. (*Lancet*, March 12, 1892.)—J. H. Nicoll reports three cases of chorea commencing in the laryngeal and pharyngeal muscles, the only symptom being a cough. A laryngeal examination is necessary for a diagnosis. The author thinks that the cough in these cases is probably a reflex one, excited by abnormal sensations in the larynx caused by the choreic movements of the muscles. The cessation of cough in one case after the use of cocaine seemed to show this, as besides the choreic movements the only abnormal condition was a congestive spot on one cord. Hoarseness may accompany the cough at a later period of laryngeal chorea. In one case the starting-point of the reflex seemed to be below the rima.

The Troublesome Symptoms caused by Enlargements of the Epiglottis and the Advisability of Reducing the Size of this Cartilage by Operative Measures. (*New York Medical Journal*, April 9, 1892.)—After describing various epiglottides which, owing to their curve, shape, and size, are strongly disposed to congestive enlargement from the irritation of contact with neighboring parts, Clarence C. Rice mentions ten or twelve cases seen by him, three-fourths of them men, of marked hypertrophy of the epiglottis.

The pathological condition is a pure hyperchondrosis effected by an abnormally large blood-supply. The mucous membrane is thickened, but there is seldom any œdema. The symptoms of the feeling of a foreign body in the throat, fulness, tickling, cough, which may be followed by vomiting or glottic spasm, "empty swallowing," are or may be present. As to treatment, the writer finds no astringent application which will cause any permanent reduction in size. A spray of two per cent. cocaine followed by some oily product, as benzoïnol, gives marked temporary benefit. Cocaine cannot, of course, be used for long. The galvano-cautery has been found inapplicable, as it causes too great inflammatory reaction. In two cases the



author has removed with long-handled scissors about one-eighth of an inch from the lateral borders of the epiglottis where it rested against the larynx. To reach the epiglottis the tongue-depressor alone was used. Free bleeding in one case was checked by nitrate of silver sixty grains to the ounce. The subsequent inflammation was slight and subsided in two weeks. Curved or right-angled cutting forceps may be used for removing a little from the edge of the epiglottis, where it is feared that too much hemorrhage would follow the use of scissors. Only a very narrow margin is ever to be removed. If, as is often the case, an hypertrophied lingual tonsil also exists, and has probably caused the condition of the epiglottis, its removal will generally afford relief. If, however, the epiglottis has become so enlarged as to rub against the posterior or the lateral pharyngeal walls, some such operative procedure as that above described will be necessary.

**Treatment of Tuberculosis with Salts of Cantharidin Acid.** (*Therapeutische Monatshefte*, March, 1892.)—Dr. Demme reports thirty cases treated with cantharidin. The sodium salts are better than the potassium, as they cause less pain. Except in one case the injections were well borne. The quantity injected was 0.0001 gramme, sometimes 0.0002 gramme. There was some improvement in almost all of eighteen cases, of which the histories are briefly given. In some the laryngeal ulcerations healed although there was no change in the pulmonary disease. The method must be used with great care. Albuminuria could never be avoided during treatment. Except in a few cases, however, it quickly disappeared on omitting treatment. Laryngeal oedema, especially over the arytenoids, was lessened and often disappeared. Ulcerations showed a decided tendency to heal, and dense infiltrations were quickly reduced. Two cases were cured [presumably only the laryngeal condition.—REV.] and others might have been could albuminuria have been avoided. [The accompanying albuminuria seems a great objection to this method of treatment.—REV.]

**The Result of Treatment of the Upper Air-Passages in producing Permanent Relief in Asthma.** (*New York Medical Journal*, March 26, 1892.)—Dr. F. H. Bosworth reports eighty-eight cases of asthma in addition to the eighty reported in 1888 treated by correcting a coexistent nasal lesion. Their treatment is based on the theory that the asthmatic paroxysm is dependent on three conditions: first, a general neurotic habit; second, a diseased condition of the intranasal mucous membrane; and, third, some obscure atmospheric condition (the exciting cause). Forty-two of these cases were cured, thirty-three improved, two unimproved, and in eleven the results are not known. In the large majority of cases the lesion was either nasal polypus, deflected septum, or hypertrophic rhinitis. Only those cases that have had at least a year of immunity are considered cured. Some of those noted as improved went for months without an attack, and in all the parox-

ysms were notably mitigated. The neurotic habit should not be neglected in treatment.

Note on the Treatment of the Angina of Tornwaldt. (*Revue de Laryng. de Rhinol., etc.*, March 1, 1892.)—This is a chronic affection of the recessus medius of the pharyngeal vault characterized by a muco-purulent secretion of greater or less abundance in this region. At times a crust forms which is a great source of annoyance to the patient until expelled. The effort to clear the pharynx of the secretion is an almost constant cause of irritation. On removing the crust one discovers the orifice of the recess, which may, in extreme cases, be a centimetre to a centimetre and a half in depth and extend from the septum to the posterior pharyngeal wall. After applying cocaine Lubet-Barbon cures the sinus with an instrument identical with the gynecological curette, but with the proper curve for the post-nasal space. The operation is continued with the aid of the rhinoscopic mirror until the surface feels resistant. It is necessary to stop occasionally to wipe away the blood. An energetic application of silver nitrate fused on a probe completes the operation. The inflammatory reaction is quite intense for a few days, with abundant discharge and some pain. The result is to transform a deep inflamed cavity with a narrow orifice into a cicatricial surface no longer retaining the secretions.

The Pathology and Diagnosis of Necrosing Ethmoiditis. (*British Medical Journal*, March 12, 1892.)—Edward Woakes describes this disease as follows: In the first stage, with commencing fibrosis, there is a more or less uniform thickening of the middle turbinated body. This increases, the septum finally yielding to it and becoming deviated, if the affection is unilateral. The nasal bone also yields to the pressure.

In the second stage, which is one of proliferation, either granulation tissue or myxoma appears. Meanwhile bony absorption is going on as a result of impaired blood-supply due to fibrosis. The glands are being converted into cysts, which gradually enlarge.

The last morbid condition is necrosis. Its favorite situation is some part of the inner wall of the ethmoid cells. There may, sometimes, be necrosis when the middle turbinated body is normal, except for a little increased redness.

The Effects of Altitude upon the Mucous Membrane of the Upper Air-Passages. (*New York Medical Journal*, April 9, 1892.)—Dr. G. M. Black describes an apparent acute coryza with marked turgescence of the turbinated bodies coming on in many persons on first arriving at the high altitude of Denver. The result of the sudden diminution of atmospheric pressure is a call for more work from the vaso-motor inhibitory nerves to arrest the vascular dilatation of the superficial capillary system, especially in the mucous membranes of the upper air-passages, where these



nerves soon become exhausted, with resulting capillary dilatation. There is a thin, watery discharge from the greatly occluded nostrils for some days. Resolution takes place about the tenth day.

**Electrolytic Treatment of Hypertrophic Nasal Catarrh.** (*Wiener Medicin. Wochenschr.*, March 19, 1892.)—Theodor S. Flatau describes his method for applying this treatment, from which the only reaction so far observed has been slight swelling and quickly-ceasing hypersecretion. Cocaine is first injected under the mucous membrane. The double needle must then be plunged in close to and parallel with the bony wall, and then held quietly in place by a head-band for the four or five minutes of treatment. If the needle is not still, or is imperfectly isolated, hemorrhages, slight but obstinate, come from the needle-holes. The current-strength should be regulated exactly, and not by the uncertain factor of the tolerance of the patient. The usual strength is forty milliampères.

This method destroys relatively the least mucous surface, and yet is not behind other methods in its results.

## DERMATOLOGY.

IN CHARGE OF WILLIAM A. HARDAWAY, A.M., M.D.,  
Professor of Diseases of the Skin in the Missouri Medical College, St. Louis.

**Nomenclature of Pediculosis.** (*Boston Medical and Surgical Journal*, May 5, 1892, p. 440.)—Dr. Charles W. Allen writes that the names adopted in the text-books, in this country at least, to designate this disease are, for the most part, both inaccurate and confusing. The generally-accepted division of the subject is into three general varieties: *Pediculosis capitis*, *pediculosis corporis*, and *pediculosis pubis*. Against the designation of the first variety he has no objection to offer, as the pediculus usually inhabits the hairy scalp, confines his entire attention to that region, and is only by accident found upon any other portion of the body; whereas, the pediculus corporis does not live upon the body as the head-louse lives upon the scalp. "If you strip a subject affected with this variety, only a laggard, who has been caught unawares, can be found upon the skin, and he will make all haste to rejoin those remaining upon the clothing." This variety deposit their ova along the seams of the garments. Hence the writer believes that this variety should only be called *pediculus vestimenti*, and the term *pediculus corporis* be used exclusively to designate what is now universally known as the pediculus pubis or crab-louse. Considerable confusion has been occasioned by the variety of names given to the latter variety, according to the situation in which it has been found during its extensive migrations. In the writer's experience there are a great many more cases

infested by the pediculus pubis than by the pediculus found in the garments. This would be another reason for calling the former variety the pediculosis corporis, on account of its greater prevalence.

Remarks on Carbuncle, with Report of a Peculiar Case. (*Journal of Cutaneous and Genito-Urinary Diseases*, May, 1892, p. 179.)—Dr. Hermann G. Klotz relates the case of a native of Bohemia, a baker by trade, fifty-seven years of age, who sought advice for an extended ulcer on the back of the head. The patient was of small size, pale, poorly developed, poorly nourished, and of a somewhat cachectic appearance. His personal history was good. On admission to the hospital, he was slightly feverish. His urine was normal, and remained so throughout the sickness. On the right forearm, and on the back of the head, there were sharply-defined tumors rising about one inch above the surface of the surrounding skin, of a dark-red color, made up of soft masses of fungous granulations of different shape. The tumor on the occiput was about the size of a hand, and reached from one ear to the other. On the left side, near the ear, the surface was deeply ulcerated over a space somewhat larger than a silver dollar. From this ulcerating surface free bleeding took place. On the right side, where the tissue was more consistent, numerous round holes from the size of a pin-head to that of a pea were present. Pus was constantly oozing from these areas of localized necrosis, and considerable quantities could be expressed by pressure as if from a sponge. These pus-producing wells were even better developed on the forearm. The discharge was copious and very offensive. Locally chlorine-water and iodoform were employed. These applications seemed to arrest the progress of the disease, and the patient finally recovered.

The main interest in this case centres around the diagnosis. Malignant disease was excluded by the rapid progress of the case, and the non-involvement of the neighboring lymphatic glands. It is a curious fact, in connection with this case, that there was no evidence of diabetes. The writer believes that such affections might well be called "diffuse carbunculoid dermatitis."

Bassorin Paste in the Treatment of Skin-Diseases. (*Journal of Cutaneous and Genito-Urinary Diseases*, May, 1892, p. 184.)—Dr. George T. Elliot recommends this substance, obtained from gum-tragacanth, as a base for the preparation of a paste or varnish to be used in the treatment of certain diseases of the skin. He believes that it possesses certain properties which render it superior to greasy applications, to collodion, etc. Almost any drug can be incorporated with bassorin paste. The superiority of this varnish is shown by the cleanliness attached to its use, and by the fact that when rubbed upon the surface it dries rapidly, forming a coating, and thus keeps the remedy continually in contact with the skin. It can be removed with the greatest ease by means of a little water on a sponge or



cloth. By its use, greasing the clothes may be obviated, which is a great advantage to the patient. Mr. Lascar has used the pure bassorin incorporated with other ingredients in the following proportion :

R	Bassorin,	48.
	Dextrin,	25.
	Glycerin,	10.
	Water, q.s.	100.—M.

The resulting paste was a smooth jelly-like compound, resembling vaseline in color, and odorless. It should be kept in a well-closed glass jar.

After more than a year's experience with the drug the writer sees no reason for changing his opinion in regard to the bassorin paste expressed in his first paper on this subject. Its application is of necessity limited. In some instances it has proved useless, and in others has exerted no action at all. During the heat of summer its use is limited by the fact that it does not dry completely, but remains sticky, and produces a certain amount of discomfort, due no doubt to the action of the perspiration. The writer then details his experience with the paste in the treatment of a number of skin-diseases, and points out the conditions in which it is especially valuable.

**A New Skin-Disease.** (*Medical Record*, New York, March 19, 1892, p. 323.)—The editor refers to the observations of Dr. Savill upon a new form of epidemic skin eruption which has been found to attack the aged population of several London work-house infirmaries. The desquamation or exfoliation of large areas of epidermis is the characteristic feature of this eruption. The shedding of the skin may be so extensive as to produce a complete cast of a hand or foot. The disease begins as a papular, papulorythematous, erythematous, or ringed eruption, and becomes confluent in from three to eight days. It ran a more or less definite course of seven or eight weeks. Twenty per cent. of the inmates in the institutions providing for the aged infirm were attacked, and a number died. Post-mortem examination in fatal cases revealed nothing. Bacteriological investigation has shown the presence of a diplococcus, but whether this is a new variety has not yet been determined.

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## HYGIENE AND BACTERIOLOGY.

IN CHARGE OF A. C. ABBOTT, M.D.,

First Assistant in the Laboratory of Hygiene, University of Pennsylvania.

**The Bacillus Coli Communis; the Conditions of its Invasion of the Human Body, and its Pathogenic Properties.** By Wm. H. Welch. (Abstract of the Address of the President of the Medical and Chirurgical Faculty of Maryland at the Semi-annual Meeting at Rockville, Maryland, November 17, 1891.)

We owe especially to Escherich the knowledge that certain species of bacteria are regularly found in the healthy intestinal canal. Of the bacteria present in the normal fæces the most abundant is the bacillus coli communis, first described by Escherich in 1885 under the name *bacterium coli commune*.

This bacillus presents so many points of resemblance to the typhoid bacillus that Rodet and G. Roux contend that the latter is simply a variety or modified form of the colon bacillus. There are, however, so many points of difference between these two bacilli that they must be regarded as distinct species.

The first observation of the colon bacillus in the tissues of the human body outside of the intestinal tract was made in 1889 by Tavel, who found this organism in the wound resulting from removal of a tumor of the thyroid gland. Since then there have been several observations of the bacillus associated with peritonitis, angiocholitis, and some other affections. No systemic observations, however, have been published as to the frequency and conditions of invasion of this bacillus into the tissues of the human body. I have, for about a year, been interested in observations of this character, and take this opportunity to present the most important of the results.

My first observation was in April, 1890. The case was one of acute hemorrhagic pancreatitis, with multiple fat-necrosis in the mesocolon and omentum. The bile was nearly colorless, and presented a sediment containing yellow granular bile-pigment, cylindrical epithelium, and zooglæa of bacilli, reminding one of the bile of rabbits dying a long time after intravenous inoculation with the colon bacilli. There existed a very acute diphtheritic colitis with superficial ulceration. In this case pure cultures of the colon bacillus were obtained from the foci of fat-necrosis, the mesenteric glands, the liver, the bile, the lungs, the spleen, and the kidneys.

In this, as in all the cases, all agar and gelatin cultures were made after thoroughly burning with a hot knife the surface of the organ at the point where the sterilized needle was inserted. The autopsy was made within one hour after death, and in general the autopsies were made in less than twelve hours after death. The colon bacillus, moreover, is not one of the bacilli that invade organs after death in the process of post-mortem decomposition.

As in this case diphtheritic and ulcerative colitis existed, it seemed probable that it was the lesion of the intestinal mucosa that permitted the invasion of the colon bacillus. Since this time we have made bacteriological examination in the manner described in most of our autopsies.

We have now found the colon bacillus in one or more of the organs of the body in thirty-three autopsies out of about two hundred.

The suspicion at first entertained has been abundantly confirmed, namely, that lesions of the mucous membrane of the intestine open the way for the invasion of the colon bacillus into the blood and lymphatic vessels, and thence into various organs and parts of the body. The lesions consisted in different cases of hemorrhage, ulceration, perforation, catarrh,



and diphtheritic inflammation, strangulation, cancer, traumatic injury, and intestinal suture.

The bacilli were found in the blood, lungs, spleen, kidneys, peritoneum, bile-ducts, gall-bladder, liver, lymphatic glands, testicle, tonsil, brain, and wounds, varying in their distribution and number in different cases. They were found with especial frequency in the lungs and kidneys, but often also in the liver, mesenteric glands, and spleen.

It is not to be inferred that ulceration or other lesion of the intestinal mucous membrane is necessarily associated with the invasion of the colon bacilli in sufficient number to be demonstrable by ordinary culture methods, but only that such invasion is a frequent result of the lesion.

In a number of cases colon bacilli were demonstrated by culture methods in various organs of the body without any noteworthy lesions of the organs containing them or any lesion that could reasonably be referred to their presence. This was true, for instance, in several cases of amœbic dysentery.

This class of cases, therefore, in which this bacillus appears to be a harmless invader, should make one cautious in attributing pathogenic powers to the colon bacillus, even when it is associated with definite lesions, unless it can be shown that other causes can be excluded. In the case of fat-necrosis, for instance, I do not believe that the colon bacillus was the cause of the necrosis, although both cultures and cover-slip preparations showed its presence in large number. I have subsequently made bacteriological examination of three cases of multiple fat-necrosis without finding any micro-organism in the necrotic foci.

I have suspected that the colon bacillus may be the cause of lobular pneumonia, as in several cases this organism has been found in large number and in pure culture in congested, cedematous, and inflamed areas in the lungs. It has also been frequently associated with fatty degeneration of the kidneys, but neither in this nor in the pulmonary affection is there any conclusive evidence that the presence of the bacilli has done the harm.

The view that the changes in the bile, noted in the case of pancreatitis already cited, are referable to the colon bacillus rests upon experimental evidence. In two cases of angiocholitis and cholecystitis with gall-stones, the colon bacillus was very abundant, and in pure culture, in the bile. Naunyn has recently called attention to the possible relation between the formation of gall-stones in some cases and the growth of this bacillus in the biliary passages. Gilbert and Girode, as well as Charrin and Roger, refer cases of suppurative inflammation of the bile-ducts and gall-bladder to the penetration into these parts of the colon bacillus.

In cases of peritonitis due to perforation of the intestine the colon bacillus is usually found, but not always, in large number in the exudate, sometimes in pure culture. In three cases of peritonitis due to intestinal ulceration without perforation I found the colon bacillus in large number and in pure culture. In these cases it seems warrantable to attribute the peritonitis to the invasion of the colon bacillus into the peritoneal cavity.

In a case of ruptured tubal pregnancy the bloody fluid, withdrawn by a sterilized hypodermic syringe from the peritoneal cavity before laparotomy was performed, yielded a pure culture of the colon bacillus. There was found a perforative appendicitis. In the pus of circumscribed abscesses due to perforation of the vermiform appendix I have found the colon bacillus in nearly pure culture. It is a mistake, however, to say, as Malvoz has recently done, that all cases of peritonitis due to intestinal lesion are referable to the colon bacillus. Often enough in this class of cases the staphylococcus pyogenes aureus or the streptococcus pyogenes is present—it may be predominantly so—in the peritoneum. In a case of perforative appendicitis recently examined the streptococcus pyogenes seemed to be the only organism present.

In a case of ovarian abscess adherent to an ulcerated cancer of the rectum the colon bacillus was found in pure culture in the abscess.

To the occasional presence of the colon bacillus in laparotomy wounds for the extirpation of diseased Fallopian tubes and ovaries, I have already called attention on another occasion.

It is especially important to know that typhoid ulceration of the intestine opens the way for the invasion of the colon bacillus, which may be found in the mesenteric glands, lungs, liver, kidneys, and elsewhere, mixed with the typhoid bacillus. On account of the resemblance between these two species of bacilli a mistake might easily be made in identifying the colon with the typhoid bacillus, and there is reason to believe that this mistake has been made by some writers. The preservation of all its properties in these cases shows that the colon bacillus is not changed into the typhoid bacillus when it invades the organs in typhoid fever; and this is a further argument against the unwarrantable assumption of Rodet and G. Roux already mentioned.

Only in two cases have I found the colon bacillus in organs outside of the intestine without any demonstrated lesion of the alimentary canal. Although careful search was made, it is not improbable that some lesion was present, so small or of such a character as to escape observation with the naked eye.

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## PATHOLOGY.

IN CHARGE OF ALLEN J. SMITH, A.M., M.D.,

Professor of Pathology in the Medical Department of the University of Texas, Galveston, Texas.

**Sacro-Coccygeal Dimples, Sinuses, and Cysts.** (*Amer. Jour. of Med. Sciences*, March, 1890.) By F. A. Mallory.—The writer, after reviewing the literature of such phenomena, contributes the results of the examination of the sacro-coccygeal region in six fetuses from three to six months of age. From these results he is led to state that in fetuses of this age there is very fre-



quently a canal, lined with epithelium, over the coccyx, sometimes connected with the skin, sometimes not. In some cases it is near the skin, in others close to the coccyx; and he believes this canal to be the remnant of a previously existing one, probably the medullary canal. From these studies it would seem that obliteration of the medullary canal takes place first and most completely at the lower part of the sacrum, and gradually extends in both directions. Sometimes the irregular development of the obliterating tissues permits the persistence of portions of the canal beneath or in connection with the skin; and in at least one foetus examined by Mallory a similar irregularity characterized the upward development of the obliterating tissues in the spinal canal. The larger of these remnants, containing glands and hairs, persist as the sinuses, cysts, or depressions in extra-uterine life; and probably only the cysts and sinuses give origin to the suppurating sinuses encountered in these regions. As a rule, little can be learned of the structure of these tissues, from those cases which demand surgical interference, except from the discovery of epithelial elements, as hairs, the suppurative and degenerative changes destroying all features of relation. The choking of these spaces with the products of epithelial desquamation, with the secretion of the enclosed glands, and with hairs, plus the element of possible contamination from external causes, leads to those not infrequent suppurative changes which usually bring the sinuses and cysts into notice.

Origin of the so-called Congenital Anophthalmus. (Genese des sogenannten Anophthalmus Congenitus. *Virchow's Archiv*, folge xii., Bd. vii., Heft 2.) By Richard Hilbert.—In a general way ophthalmologists classify under the term *anophthalmus* all those eyes which, entirely or only partially absent, are totally devoid of function; in reality many are instances of *mikrophthalmus*, rudimentary bulbs usually persisting. *Anophthalmus congenitus* is by no means a common anomaly of birth; it is generally double, but may occasionally be one-sided. It has been variously held to be the outcome of a complete failure of ocular formation, or to be the result of a fault of development with subsequent retrograde change. In support of this last view the author reports the case of a well-formed, otherwise healthy infant, whose eyelids at birth were closed, and when opened, as was immediately done, permitted the escape of a large amount of creamy pus. After the pus was cleaned out, two pyramidal cavities marked the sites of the eyes; these were lined with livid, swollen conjunctivæ. On the left side in the floor of the cavity described was to be seen a whitish, slightly gray, round body, about two millimetres in thickness, evidently the remnant of the shrunken bulb. On the right side there was not the slightest trace of the optic body, nor was there any intimation of any pathological condition arising from its suppression. The presence or absence of tear-glands, of ocular muscles, and optic nerves was of course not to be determined in the living child. Under ordinary care, with precautions of cleanliness, the acute inflammatory symptoms subsided, and the child con-

tinued to grow in health and strength. The author could not trace any cause for the occurrence in the history of either parent, and is unable to offer any explanation for the formation of pus in intra-uterine life.

**Dormant Cells in Normal and Altered Fat Tissue.** (Schlummernde Zellen in normalen und pathologisch veränderten Fettgewebe. *Virchow's Archiv*, Bd. cxxviii., Heft 1.)

From a series of histological studies of the development and regeneration of fat-tissue in cutaneous and subcutaneous wounds, and of altered adipose tissue in structures which have lost their fat by atrophy or mucoid change, Dr. Hermann Schmidt deduces the following: In its formation, a fat-cell is primarily a simple structure, arising from a single cell, mucous or fibrous connective tissue. By the addition of other cellular elements, the young fat-cell gradually grows to its completed size and form, the surrounding connective-tissue cells implicated in the process contributing by their protoplasm to the membrane surrounding the fat-globule, like the wall of a hollow ball, while their nuclei gradually take on the character of the so-called "dormant cells." The fully-developed fat-cell of ordinary adipose tissue is thus not, as in the beginning, a single cell, but the result of a number of cells merged together, the single components being present in the membrane covering the fat-globule, joined together in a manner we cannot see. Under certain conditions of irritation, however, this agglutination fails, the cells returning to their separate conditions of existence; and the membrane of the fat-cell, previously apparently homogeneous and structureless, takes up nuclei and splits into its component cells. These resultant cells present all the ordinary properties of fixed connective-tissue cells, are capable of mitotic division, and may become or give origin to wandering cells. In the healing of wounds these nuclei (dormant cells) are the point of origin for a well-vascularized granulation tissue, which proceeds to cicatrization. It is possible, further, that later on this cicatricial tissue may undergo a transformation into adipose tissue. In inflammatory processes in adipose tissue, especially in the chronic form, one may see clearly the cellular nature of the membrane of the fat-globule, with the origin of embryonic connective-tissue corpuscles from the nuclei of the cells,—that is, from the dormant cells. As a rule, this granulation tissue, under these circumstances, is apt to undergo a fatty change. In the acute inflammation of adipose tissue, the embryonic tissue resulting has more the type of the wandering cells than of organizing tissue. In atrophic conditions, also, the cellular structure of the membrane of the fat-globule is very evident, and cellular formation occurs with the development of fibrous or mucous connective tissue, thus constituting fibrous or mucous atrophy of adipose structures.

**Obscure Cases of Enlargement of the Solitary and Agminated Follicles of the Intestine.** (*British Medical Journal*, April 9, 1892.)—



Smith and Parsons describe four cases, all in children under five years of age, in which at post-mortem examination the solitary and agminated follicles of the intestines were quite markedly enlarged. The history of the clinical course of each case, the failure to demonstrate typhoid bacilli, the absence of ulceration in the enlarged parts, and the relative infrequency of typhoid fever in the neighborhood were regarded as excluding this latter condition. In all the cases the attack had been ushered in suddenly by vomiting or by pain in the abdomen, by the occurrence of convulsions varying slightly in character, unconsciousness, and death. The authors make reference to Rokitsansky, who recognizes tumescence of Peyer's patches from "acute convulsions"; it seems much more appropriate to regard these enlargements of the follicles, as well as the enlargement of the mesenteric glands and the prominence of the Malpighian corpuscles of the spleen, as due to the action of some product of maldigestion, if not of some bacterial substance or a bacterium itself, the post-mortem changes and the nervous symptoms being probably due to the same factor.

Upon the Value of the Meat from Tubercular Cattle. (Ueber die Verwerthung des Fleisches von tuberculösem Schlachtvieh. *Centralblatt f. Bakteriöl. u. Parasitenk.*, Bd. xi., No. 14.)—Perroncito, who as early as 1874 and 1875 (*Ann. der kgl. Akad. f. Landwirthschaft in Turin*, Bd. xviii., 1875) stated his belief in the absence of any danger to those eating the flesh of tubercular animals from the transmission of the disease, calls up his former position to corroborate it from a richer experience. During 1889-91 he conducted an extensive series of experiments upon guinea-pigs, puppies, pigs, and horned cattle, which was summarized before the International Congress of Hygiene in London, and in the Congress at Paris for the Study of Tuberculosis, during the last summer. The meat obtained from the public slaughter-houses in Turin was fed in several experiment groups to pigs, and the juices were injected into puppies, guinea-pigs, and cattle. More than two hundred puppies and quite as many guinea-pigs were subjected to these experiments, the meat-juice, or a watery extract of the meat, being injected subcutaneously or into the abdominal cavity. After intervals of six weeks, two, three, or more months, these animals were killed, not a trace of tuberculosis being evident. Two cattle were subjected to subcutaneous injection of the meat-juice, and when killed, six months later, showed no sign of the disease. Four pigs, six months old, were fed for four months on the flesh from tubercular cattle, without exhibiting the least evidence of acquirement of the affection. A litter of twelve pigs, aged two months, were fed for five months on the flesh from tubercular cattle; several died from other diseases, and the rest were all killed at varying periods, without any tubercular lesions being found. Two pigs were fed for three months on flesh from tubercular animals, and afterwards fed with tissues in various grades of tubercular changes; when killed they showed not the least evidence of having acquired tuberculosis.

## CLIMATOLOGY.

IN CHARGE OF GUY HINSDALE, M.D.,

Lecturer on Climatology in the University of Pennsylvania, Philadelphia.

**Leprosy in Minnesota.**—Dr. Chr. Gronvald, in the *Lancet*, March 26, 1892, shows that leprosy is not so easily acquired in this portion of the United States as in other countries. “The commonly dry and always windy climate of this great inland plateau, with its great and sudden changes of temperature, open as it is towards the Gulf of Mexico and towards the north pole, may, perhaps, make it more difficult for the *materia peccans* to fix itself on persons and things. The hot summer that opens up the pores of the skin and drains the system that way, and the cold, stormy winters, acting on the body somewhat differently, may have influence in that direction. That the climate must have some influence in preventing the spread of the disease seems yet more probable when we remember that the early settlers, often with a large family of children, lived for a long time in small, close, and badly-ventilated log houses, closer even than they were accustomed to in their old homes. . . . The change in the physical constitution of people who have lived here some time, the effect of acclimatization, and of other influences, may make the individual less susceptible to contagion.”

Dr. G. Armauer Hansen, of Bergen, Norway, the discoverer of the bacillus lepræ, visited the Northwestern United States in 1888, and reports that of the descendants of one hundred and sixty lepers who emigrated from Norway into Wisconsin, Iowa, and Minnesota, not a single one has become leprous.

DR. J. P. WIDNEY<sup>1</sup> has called attention to the needs of a class of invalids in California, for whom neither the sea-coast, the interior valleys, the mountain foot-hills, the high Sierra, nor the desert slope of the Sierra are altogether suitable. The desideratum is a climate possessing the coolness and equability of the sea-coast without its fogs and its harsh winds. Such localities exist in the higher elevations of the Coast Mountains upon the peninsula immediately north and south of San Francisco Bay and, in a more marked degree, in the Sierra Madre Mountains back of Los Angeles, and in the Santa Monica Mountains, westward of that city, reaching to the sea. These localities derive their day freshness from the proximity of the cool waters of the sea, while the rapid radiation characteristic of the clear atmosphere of the uplands gives to the night air that peculiar crispness so tonic to the human constitution. Difficulty of access has hitherto been a great obstacle; but a project is now under way by which a railroad will be constructed to a plateau on Mount Wilson, near Los Angeles, reaching an altitude of two

<sup>1</sup> Transactions California State Medical Society, Occidental Medical Times, May, 1892.



THE American Climatological Association will hold its ninth annual session on June 22, 23, and 24, at *Richfield Springs*, New York, instead of Sharon Springs, as stated on page 553 of this magazine.





thousand feet. It is expected that this site will comprise more advantages than may be found elsewhere in California.

THE American Climatological Association will hold its ninth annual session at Sharon Springs, Schoharie County, New York, on June 22, 23, and 24.

THE arid regions of the United States have been recently investigated by the United States government with reference to irrigation and water-storage. The formal report<sup>1</sup> on this subject conveys definite knowledge of the climate of the great interior basin of the United States and the adjacent territory. Minute details as to the possibilities of subsistence in this most healthful region of our country are eagerly sought for by those who intend taking up their residence within this area, and no work furnishes so well as this a description of its characteristics. The maps illustrate elevation and monthly and annual temperature and rainfall.

THE establishment of a State Park in the Adirondack Mountains has recently been authorized by the Legislature of the State of New York. The bill providing for this reservation has been framed so as to provide for the grouping of all State lands in the Adirondacks and the preservation of this valuable region as a resort for health and recreation.

The importance of such reservations is publicly recognized, and the beneficial influence of these forests will be preserved for succeeding generations.

A MEMORIAL has recently been presented to the President of the United States, expressing gratification at the exercise of the President's power under the law of March 3, 1891, in enlarging the boundaries of the Yellowstone and Yosemite Reservations. The Forestry Division of the United States Department of Agriculture urges the establishment of additional reservations, viz.:

1. Flat Head and Marias River Reservation, in Northwestern Montana.
2. Tulare Reservation, in California.
3. Pecos and Canadian River Reservation, near Santa Fé, New Mexico, five hundred and seventy-six square miles.
4. Pike's Peak Reservation, in Colorado, three hundred and fifty-seven square miles.
5. Minnesota National Park, in the northern part of the State, at the head-waters of the Mississippi River, six million acres.

We trust these reservations may be established and maintained for the public health.

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<sup>1</sup> Irrigation and Water-Storage in the Arid Regions, Washington, 1891, pp. 356, maps 37.

# FORENSIC MEDICINE.

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IN CHARGE OF LORENZO D. BULETTE,  
Of the Philadelphia Bar.

## *A CASE ILLUSTRATING ONE PHASE OF THE CONFIDENTIAL RELATION OF PHYSICIAN AND PATIENT.*

THE relation of physician and patient is, in its legal aspect, both contractual and confidential; but it is with one phase only, of the confidential relation, that the present paper proposes to deal.

The position of trust and confidence which the physician occupies, and the opportunities for acquiring information of the infirmities of his patient that the sick-room affords, place him under the highest obligation to throw around knowledge so obtained the cloak of absolute secrecy. He is released from this obligation only when the requirements of a judicial investigation make such disclosures necessary. But the practitioner who voluntarily betrays the confidence so intrusted to him is deserving of the severest condemnation, and unworthy to be a member of a noble profession, happily so generally imbued with the nicest sense of honor and professional integrity. So careful, indeed, is the law to preserve inviolable the secrets of the sick-room, and protect the patient from wanton or unnecessary exposure, and thus foster the confidential relation that should exist between the physician and patient, for the benefit of the latter in his extremity, that even the exposure of a patient, from a mistaken notion of necessity, was visited with a severe pecuniary penalty.

The case (*De May vs. Roberts*, 46 Mich. 160) was that of a physician who took with him, to attend a case of confinement, an unprofessional, unmarried man, where there was no real necessity for the latter's assistance. Both were held liable in damages for the deceit thus practised; and it was immaterial that the patient and her husband supposed at the time that the intruder was an assistant physician, and so submitted to his presence without objection. Their interest to the profession may justify a somewhat full presentation of the facts of this case, and the comments of the court in applying the principles of law thereto.

The evidence of the plaintiff tended to prove that she was a married woman, poor, and a stranger in that community, and about to be confined in childbed; that she employed the defendant, De May, who was a physician, to attend her in a professional capacity at her house; that he not only came



himself, but brought with him, and caused to be present in the house and lying-in-room of the plaintiff, S., a young, unmarried man, a stranger to the plaintiff, and utterly ignorant of the practice of medicine, while she believed that he was an assistant physician, a competent and proper person to be present and aid her in her extremity. It was also shown that the house was small, with but a single room, and that the circumstances and surroundings were such that S. could see, or at least hear, all that went on in the room.

On the part of the defendants, evidence was given tending to prove that S. very reluctantly accompanied Dr. De May at the urgent request of the latter; that the night was dark and stormy, and the roads over which they had to travel in getting to the house of the plaintiff were so bad that a horse could not be ridden or driven over them; that the doctor was sick and very much fatigued from overwork, and therefore asked the defendant, S., to accompany and assist him in carrying the lantern and umbrella, and certain articles deemed necessary on such occasions; that upon arriving at the house of the plaintiff the doctor knocked at the door, and, when it was opened by the husband of the plaintiff, De May said to him, "I have fetched a friend along to help carry my things;" that he, plaintiff's husband, said, "All right," and appeared to be perfectly satisfied. They were bidden to enter, treated kindly, and no objection whatever was made to the defendant S. That while there, S., at the request of Dr. De May, took hold of plaintiff's hand and held her during a paroxysm of pain, and that both of the defendants acted throughout in all respects in a proper and becoming manner, actuated by a sense of duty and kindness.

There was a verdict and judgment for the plaintiff in the court below, and this was affirmed on appeal to the Supreme Court.

The plaintiff, when examined as a witness, was asked what idea she entertained in reference to S.'s character and right to be in the house during the time he was there, and answered that she thought he was a student or a physician. "To this," says the court, "there could be no good legal objection. It was not only important to know the character in which S. went there, but to learn what knowledge the plaintiff had upon that subject. It was not claimed that the plaintiff or her husband, who were strangers in that vicinity, had ever met S. before this time, or had any knowledge or information concerning him beyond what they obtained on that evening, and it was claimed by the defendant that both the plaintiff and her husband must have known, from certain ambiguous expressions used, that he was not a physician.

"We are of opinion that the plaintiff and her husband had a right to presume that a practising physician would not, upon an occasion of that character, take with him and introduce into the house a young man in no way, either by education or otherwise, connected with the medical profession; and that something more clear and certain as to his professional character would be required to put the plaintiff and her husband upon their guard, or remove such presumption, than the remark of Dr. De May, that he had

brought a friend along to help carry his things. The plaintiff was not bound to rest her cause upon this presumption, however strong it might be considered, but had a right to prove what she supposed was the fact, and this she could do by showing anything said at the time having such a tendency, or in the absence thereof what she actually believed to be the fact."

And the court, continuing, says,—

"Dr. De May took an unprofessional, young, unmarried man with him, introduced and permitted him to remain in the house of the plaintiff, when it was apparent that he could hear at least, if not see, all that was said and done, and as the jury must have found, under the instructions given, without either the plaintiff or her husband having any knowledge or reason to believe the true character of such third party. It would be shocking to our sense of right, justice, and propriety to doubt even that for such an act the law would afford an ample remedy. To the plaintiff the occasion was a most sacred one, and no one had a right to intrude unless invited or because of some real and pressing necessity, which it is not pretended existed in this case. The plaintiff had a legal right to the privacy of her apartment at such a time, and the law secures to her this right by requiring others to observe it, and to abstain from its violation. The fact that at the time she consented to the presence of S., supposing him to be a physician, does not preclude her from maintaining an action and recovering substantial damages, upon afterwards ascertaining his true character. In obtaining admission at such a time and under such circumstances without fully disclosing his true character, both parties were guilty of deceit, and the wrong thus done entitled the injured party to recover the damages afterwards sustained, from shame and mortification, upon discovering the true character of the defendants."

The facts of this case serve to illustrate, in an admirable manner, one phase of the confidential relation that exists between physician and patient, and to point out the nature and extent of the legal duty thereby imposed upon the medical and surgical practitioner. Another phase of this relation, distinguishable from the first, is involved when a physician is called as a witness to testify in a court of justice as to information of the condition of his patient obtained while employed to treat the latter in a professional capacity. The legal duty of a physician in this respect will be the subject of a future paper.



## BOOK REVIEWS.

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INTERNATIONAL CLINICS: A QUARTERLY OF CLINICAL LECTURES ON MEDICINE, NEUROLOGY, PEDIATRICS, SURGERY, GENITO-URINARY SURGERY, GYNÆCOLOGY, OPHTHALMOLOGY, LARYNGOLOGY, OTOTOLOGY, AND DERMATOLOGY. By Professors and Lecturers in the Leading Medical Colleges of the United States, Great Britain, and Canada. Edited by John M. Keating, M.D., Judson Daland, M.D., J. Mitchell Bruce, M.D., F.R.C.P., and David W. Finlay, M.D., F.R.C.P. Vol. i., 1892, Second Series. Philadelphia: J. B. Lippincott Co.

With such a definite title-page comes the opening volume of the second annual series of this admirable publication. A new broom is said to sweep clean, and a new home editor may be expected to exert a fresh impulse of improvement in a journal. It must be recalled, however, that the *International Clinics* has been marked since its inception with the spirit of excellence and progression, and that it was established with a definite purpose that precludes much change. The conduct of such a publication depends not so much upon the active exertions of the editorial staff as upon its critical discernment. The pronounced excellence of the matter included in last year's volumes and their even grade have created a standard the realization of which must insure continued success for each succeeding volume. Dr. Judson Daland, who follows Dr. J. P. Crozer Griffith, of last year's editorial staff, is to be congratulated in that this the first volume under his management as home editor maintains so well the position created by the preceding volumes. Like its predecessors, it contains a few articles which cannot be regarded as all that might be desired, but these are few, and the bulk of the articles are far above the average of the clinical publications of ordinary medical journalism. There are more illustrations by fifty per cent. than in any of the volumes of the first series, a feature most gratifying to the reader and evincing the generous interest of the publishers, and an improvement of decided value upon which the editors may congratulate themselves. There are thirty-eight contributions included, a number slightly below the average of the first year; but the total number of pages is increased somewhat, a few of the articles being of considerable size.

In the medical section are eleven clinical lectures, headed by the one of most excellence, a consideration of the pulmonary complications of epidemic influenza, by Dr. J. M. Da Costa, of Philadelphia. After calling attention to the great variability of different epidemics in the severity and prevalence of pulmonary affections in this disease, the lecturer brought to the notice of his class, as a type of one of the most frequent complications, a case which presented many of the symptoms of pneumonia, but which differs materially in the less frank invasion and the gradual decline of the symptoms, in their irregularity, and in the incompleteness of the physical signs. Besides this case, Dr. Da Costa illustrated the variability of the affection by cases in which the temperature and the early and marked crisis indicated a close relationship with ordinary pneumonia, and by cases in which pneumonic consolidation undoubtedly occurred. In these cases the question arises whether the influenza lung, with its congestion and occasional solidification, is to be regarded as the product of the same disease as ordinary pneumonia. Dr. Da Costa believes the diseases are different, and that pneumonias from influenza—or those cases which are generally dealt with as pneumonia in these circumstances—should not be included with ordinary

croupous pneumonia in our vital statistics. The treatment employed by Da Costa in most of the cases which have been under his care has consisted in the administration of large doses of salts of ammonium, with quinine, carefully sustained nutrition, and with digitalis and other stimulants in many cases. In instances of marked congestion of the lungs nitroglycerin has seemed to exert a beneficial effect in diverting the blood to the vessels of the surface and relieving the pulmonary stagnation, and the lecturer stated that he deemed it worthy of a fuller trial. The purpose of Dr. Drummond's lecture is to impress the fact that cirrhosis of the liver is not a simple pathological entity with a single train of symptoms, but is made up of a group of changes and clinical variations. The lecture upon diagnosis of pulmonary tuberculosis, by Dr. C. Theodore Williams, covers a field in which most statements tend towards being platitudes, but the order of consideration, and the clear presentation of the clinical phenomena and their relation to the morbid conditions present, make the paper noteworthy among its companions. The article upon Graves's disease, by Foot, of Dublin, is very much marred by frequent allusions in the text of the lecture to illustrations which are not forthcoming, although otherwise there are no objections to be made to his consideration of this diagnostically simple disease. Among other cases Foot presents one of extreme interest, in that marked pigmentation was noted about the eyes and other parts of the body. This pigmentation excited the suspicion of Addison's disease as a complication, but gradually became fainter as the disease became quiescent. Within recent years there have been a number of instances where Basedow's or Graves's disease and Addison's disease have been found in one individual; it seems probable that this coexistence is something more than accidental, and, although little note has been taken of the fact, that a common origin underlies both conditions. Moreover, the frequent occurrence of both these affections among the insane, or at least their more frequent occurrence among the latter than among the sane, is significant. The lecture by Professor Phelps upon the use of valvular drainage in the treatment of empyema is not new, but by right of originality interesting. It will be recalled that this valvular drainage was introduced with the purpose of preventing collapse of the lungs in these cases, the valve in the drainage-apparatus opening outward and favoring the exit but preventing the entrance of air into the pleural cavity through the drainage opening. In the respiratory movements a relative vacuum is thus produced in the pleural sac, and the lung is permitted to expand with normal freedom. The lecturer admits the priority of the application of the same principle by Dr. Robert Lee, of London, the paper of the latter antedating that of Phelps by a few weeks, although it was unknown for a long time by the lecturer, and was by no means elaborated by Dr. Lee at the time.

The neurological section is represented by six papers, rather less than the rule, including such well-known authorities as Charcot, Sachs, and Dercum. As in his lecture upon chorea, published last year in this work, Dr. Dercum has made free use of illustrations, and it is safe to say that the former and the present articles by this author have been the best illustrated in the history of the *Clinics*. A careful selection from the rich material in Philadelphia Hospital nervous wards has enabled the lecturer to present a series of illustrations indicating the attitudes and expression in the different stages of the disease in a far more satisfactory manner than could possibly have been accomplished by text. The excellence of the article is, however, not confined to the illustrations, the text of the lecture being in every way commendable. Mackenzie, of London, has contributed in his lecture upon diphtheritic palsies one of the most satisfactory and carefully-considered articles in the volume, accurate and acute without passing beyond the ready comprehension and interest of the average reader, and yet complete for the understanding of the most advanced and scientific. In the judgment of your humble critic this lecture makes a very worthy bid for the position of prime excellence in the entire volume. In his consideration of the nervous sequels and complications of diphtheria the lecturer gives first place to the paralyses,



but does not fail to pay attention to the sensory disturbances, changes of reflexes, and other nervous phenomena occasionally met. The lecture is based upon two cases differing only in the time of appearance of the palsies and their order of appearance. In the one case the complication appeared only a few days after the diphtheria became pronounced, and affected first the palate and then the muscles of ocular accommodation; in the second, the same palsies occurred, but in the reverse order, and made their appearance about the fifth week after the attack. It is believed by many that these nervous phenomena are really due to a condition of uræmia, the kidneys being a common seat of serious disorder from the action of the diphtheria poison. While this may in some cases be true, the author is not willing to accept it as a solution for general application. In his experience albuminuria, as an expression of renal involvement, occurred in a large proportion of cases in which palsy was present, but those cases of paralysis in which albuminuria was present differed in no appreciable manner from those where the latter was absent. Mackenzie has studied the knee-jerks in two hundred and forty cases of diphtheria, of which eighty-one were fatal. In eighteen out of seventy-eight fatal cases, and in two of one hundred and forty-two non-fatal cases, the knee-jerk was absent in the first week of the disease; in the second week it was absent in five out of twenty-one fatal cases and two of one hundred and forty-two non-fatal cases; in the third week it was absent in six out of nine fatal cases and in four of one hundred non-fatal cases. The early failure of this phenomenon is thus apparently an unfavorable symptom, the more so the earlier it appears. It is, however, difficult to make a very accurate observation without considerable disturbance of the patient, and hence the practical value of this as a prognostic sign is considerably lowered. The lecture abounds in observations of this character, and should be sought out by any one interested in the subject.

Pediatrics is represented by a lecture upon rickets by Professor Forchheimer, of Cincinnati, upon eye-diseases in children by Gunn, of London, and upon constipation in children by Rex, of Philadelphia.

The section on surgery illustrates a feature which it will be well to keep more or less in abeyance in the future volumes. To make any clinical lecture worthy of publication in a work such as this, the lecture should excel, either in a single meritorious point, or in its completeness upon the subject treated of. A surgical clinic is, it is true, not a clinic of words, but of action, and from necessity, therefore, the lecturer limits his words to a fraction of the hour usually given. An eye-witness of the operative methods fails to notice the absence of words and the lack of description which are usually so prominent in the other clinics; therefore the bare report of such a lecture does not, as a rule, compare favorably with the average medical lecture. Perhaps here more than anywhere else, then, should illustrations be used and supplementary writings employed to make good the unavoidable deficiencies of the manually employed hour; it is, however, in the present volume, and has been in the four preceding ones, a very slightly illustrated section, and in some of the instances the lectures are a very barely remodelled exposition of the text-books. The two articles which are particularly notable for their excellence were both delivered at Middlesex Hospital in London, that upon vertebral caries by Hulke and that upon excision of the breast by Gould. Space, unfortunately, precludes an extended notice of either. The section includes also articles by such lecturers as Ashhurst, Bauer, of St. Louis, Vander Veer, of Albany, and Roberts, of Philadelphia. Professor Edward Martin, of the University of Pennsylvania, opens the section on genito-urinary and venereal diseases, with a really valuable contribution upon acute anterior gonorrhœa. His remarks upon the prophylaxis of gonorrhœa are particularly sensible and appropriate, the subject being generally more or less avoided or slurred over by teachers. Illicit and impure sexual intercourse is an actual fact, demanding attention, and the sooner the medical profession, and through it the laity, are made clearly acquainted with the real import of the matter, the fewer and the less serious results will be ex-

perienced from what has grown to be an irrepressible, if not a necessary, evil. Dr. Watson's lecture upon the treatment of vesical new growths is also a worthy paper. One of the star lectures included in the volume is that by Professor Montgomery, of the Jefferson Medical College, upon malignant disease of the uterus, in which the various methods of procedure are described, curetting, removal of the cervix, and the extirpation of the uterus by abdominal section, through the vagina, and by Kraske's sacrococcygeal opening. Dr. Montgomery's remarks were, of necessity, based upon the records of previous cases, from which he drew very favorable inferences as to the last mode of procedure. The other two lectures in this section—by Goodell, upon adenoid cyst of the right ovary, and by Mundé, upon a group of ovarian cases—are also exceedingly valuable contributions; in fact, the section upon gynæcology may be regarded as the most equal in the volume, and as possessing the highest average of excellence.

Looking at the volume as a whole, the conclusion is easily reached that the work has been well done; that the book is a worthy companion of its predecessors; and that a jealous care must be exercised to continue the future excellence of the series upon the same plane occupied by the five existing volumes. A zealous interest is evident on the part of the contributors, and the only caution the critic can offer is to exercise care in the acceptance of articles. Good ones are plentiful, and all others should be rigidly excluded.

A. J. S.

**DISEASES OF THE NERVOUS SYSTEM.** By Jerome K. Bauduy, M.D., LL.D. Second Edition. Philadelphia: J. B. Lippincott Company, 1892.

This volume of interesting lectures has a somewhat misleading title, as it is not a manual or treatise on diseases of the nervous system, but a collection of lectures on a few of the most important of these diseases and on some types of insanity. The first edition of the work was published sixteen years ago, and it has been practically out of print for many years; but in the present edition the author has endeavored to bring it up to the times. It is a monograph rather than a treatise, and shows a large amount of research and consultation of authorities, who are freely quoted in almost every chapter. It will probably be found more useful to the student and general practitioner than to the specialist in neurology and psychiatry. Among new matter of value much is taken from Charcot's most recent clinical and pathological researches, as, from those upon cerebral softenings, and encephalitis, and upon neomembranes of the dura mater. The author's style is usually clear, simple, and forcible. He adopts Maudsley's classification of insanity; and it is a fair criticism on the work in general that he shows too much tendency to adopt and quote from the views of others. Among the most interesting chapters are those which deal with medico-legal considerations. He favors the adjudication of cases by a commission of medical experts. While this volume cannot take the place of works on nervous diseases like those of Ross and Gowers, or on insanity like those of Spitzka, Hammond, and Bevan Lewis, it will be found useful to physicians and students for reference and consultation.

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EDITOR.



# INTERNATIONAL MEDICAL MAGAZINE.

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## ORIGINAL COMMUNICATIONS.

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### *THE RELATION OF NEUROPATHIC INSANITY TO CRIME.*<sup>1</sup>

BY H. C. WOOD, M.D., LL.D.,

Clinical Professor of Nervous Diseases in the University of Pennsylvania.

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IN any discussion it is of vital importance primarily to define the terms which are to be employed. The word "neuropathy" means, in accordance with its derivation, a disease of the nervous system, and would seem therefore to be applicable to very many more or less serious disorders. By modern alienists, however, the term is commonly used in a more restricted sense, and especially as the basis of the adjective "neuropathic," to designate those forms of insanity in which an original vicious development or failure of development of the nervous centres underlies the symptoms, or in which, as the result of malevolent causes acting during early life, the nervous centres have undergone, during the period of their unfolding, alterations similar to those just spoken of as being a result of heredity. It is evident that mental symptoms, having a basis such as has just been spoken of, must be of a chronic character, because the inherited or acquired defect of nervous organization is persistent. Neuropathic insanities are therefore essentially chronic and incurable, rooted in the general character of the individual.

The neuropathic insanities may be divided into two great groups: the first including those in which there are distinct delusions; the second, those in which delusions are wanting or at least are not evident. Neuropathic

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<sup>1</sup> An Address delivered before the State Medical Society of Pennsylvania.  
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insanities with delusions are known as Paranoia; those without delusions, as Reasoning Insanity. The existence or non-existence of a delusion would seem to constitute an arbitrary line which would enable us to separate at once the paranoiac from the normal individual. In truth, however, religious beliefs so run into religious delusions that it is often exceedingly difficult to decide whether an individual should be considered to be sane or insane. If such difficulty exists, how much more difficult is it to make a decision in cases of Reasoning Insanity, in which no delusions exist, and in which great mental power and even genius may coexist with such mental warp that the human individual is separated from the great mass of his fellows, whom we speak of as sane.

In the brief time allowed me, I can but allude to a few cases illustrative of the way in which the normal mental condition passes into eccentricity and then again into madness. There are individuals who are dominated by an idea which they recognize to be untrue, but whose control they are unable to escape from. Such an idea is spoken of as an Imperative Conception. Allied to the Imperative Conception is the Morbid Impulse, by which the individual is driven to act by some call or force from within. The impulse which comes to most men to throw themselves from the brink of the high precipice on which they are standing is well known. Impulse of a similar character, born of no reason but possessed of controlling powers, may lead to assault and death. Once, on entering my office, I found a man cowering in the corner, with an expression of agonized terror, the cold sweat starting from his face. As I entered he greeted me with, "Doctor, doctor, I nearly did it, I nearly did it." The man was a victim of a frequently-recurring morbid impulse to commit assault upon strangers; as the result of several nights of great political excitement, the impulse "to clean out," as he expressed it, one of the large office buildings in Philadelphia, seized him with such force that he had only escaped from a criminal act by running in a paroxysm of terror to the refuge of my office.

Although I am forbidden at present to discuss at any length the subject of Reasoning Insanity, yet I can scarcely forbear further illustrating the subject briefly. One of the curious forms of Reasoning Insanity is *la folie du doute* of the French authors,—the insanity of doubt,—in which the patient is entirely without confidence in the integrity and reliability of his own mental processes. This mental condition may be looked upon as an exaggeration of self-distrust, and when it is complete leads to insanity of conduct. A patient who was struggling with the incipient form of the disorder, said to me, "Two and two make four, so my intellect tells me, but how am I to know that my intellect is absolutely right in its conclusion? And then when I remember having done a thing, how am I to know that my memory is correct, and that which I remember to have done really did take place? I am especially bothered with my baby at night. I change its diaper, feel the new diaper and know that it is dry; I remember the act, but I have no confidence either in having done the act or in the sensation



of dryness to my hand, and so I must change the diaper again." And so the unfortunate woman and the almost equally unfortunate baby spend hours of close intercourse in covering and uncovering and being covered and uncovered.

Let me give you the brief outline of the life of a man some of you must have known, who, from his earliest childhood, though intelligent, shrewd in business, conversing well on all subjects, was dominated by imperative conceptions and morbid impulses. As a child the impulse came to him continually to rub his arm against his side, and in spite of flogging and other punishments the impulse was obeyed until coat after coat was rubbed into holes. Then he became mysophobic, afraid of personal contamination, and spent much of his life in performing the rites of cleanliness. Then other morbid impulses developed. When I first knew him he was tyrannized by the morbid conception that it was absolutely essential for him to lay things straight, and that he was not able to do it; the most of his waking hours were spent in putting down and arranging. When he placed a book upon the table, over and over and over again he would lift it up, straighten it, pick it up and relay it, etc. Often at night he would be two or three hours getting away from his coat, which he was perpetually arranging upon the chair on which he had laid it. There was no delusion, and on my asking him why he yielded to the impulse, he said, "I can resist it for a while, but after a time the same overpowering sensation comes as when I hold my breath, and I must do it. I have found that if I say very fast, 'It is straight, it is straight,' over and over again, at the same time cracking my fingers briskly by shaking my hand, the impulse often suddenly vanishes, with immediate relief." The end of this unfortunate victim of disordered nerve-centres was very tragic. By great care and effort he had succeeded in concealing from the general public his mental weakness, and was engaged in business enterprises of large magnitude. In the course of one of these it so happened that he became involved in a law-suit which finally necessitated his going upon the witness-stand. The newspapers of the morning of the day on which his testimony was to have been taken announced his sudden and unaccountable suicide. Excessively sensitive and proud, when he found himself in such a position that he must reveal to the public his extraordinary peculiarities, he preferred to such exposure death by his own hands.

From my own note-books I might detail further illustrations of the morbid, irresistible, internal forces which dominate many neuropathic lives, but let those already given suffice.

Although we are accustomed to look upon character as something apart from intellectuality, yet character is as closely dependent upon the organization of the brain as is mental life. Hence, *a priori*, we should expect to find neuropathic disorders of character as well as neuropathic disorders of intellect. In truth, an undeveloped or a malformed organization of the cerebral hemisphere yields as certainly an evil crop in character as in

intellect. Intellectual insanity is almost invariably associated with insanity of character, and insanity of character is almost invariably associated with insanity of intellect; but when character escapes in great part, the mental overshadows the moral disorder, and the person is simply spoken of as intellectually insane. When the intellect escapes in great part, and the disorder of character hides the mental symptoms, the person may be spoken of as morally insane.

So much contempt has been thrown upon the idea that crimes and vice may be as truly evidences of malformation or disease of the brain as is disordered mental action, that I pause to enforce my argument by a few facts. Citing from the experience of others, I may mention the cases narrated before the second International Congress of Criminal Anthropology, by Dr. Mangan: A girl of twelve years, who, from early childhood, though intelligent and good-looking, stole, fought, bit, destroyed, without reason and without motive, and lived in a condition of sexual excitement, with sexual excesses dominating her whole life. Of E. M., who, as a child, stole, destroyed, attempted to poison her father, tried to kill her twin brother, and while still a child burst out into a fury of sexual delirium. Of L. C., who, at the age of three years, stole; at five years, was arrested after violent resistance, and who, even at this age, showed no evidence of moral sense. Of G. J., who, though apparently of good development physically and mentally, was morally a series of unbelievable deformities, and at five years of age began the most frightful of sexual practices. These children, be it remembered, were most if not all of them born of families where insanity, epilepsy, or alcoholism were hereditary traits. You are probably familiar with the much-quoted case published some years ago in the *American Journal of Insanity*, of the boy who, while yet scarcely more than an infant, found his greatest pleasure in tying cats, chickens, and other animals, so that they could not escape or injure him, and then beating or cutting them to death; who, at twelve years of age, nearly flogged his infant brother to death; who, later, attempted to strangle a younger brother and to smother his infant sister; and whose after life was one long record of assault and insane criminalities. Not long since I examined the mental condition of a young woman, who, born of respectable parents, educated with some care, had been detected at eight years of age masturbating her younger brother, and whose life from this time had been an orgie of sexual crimes, ending in a murder having only the jealousy of a common prostitute as its basal motive.

The germ or potentialities of most if not all neuropathic disorders lurk in the nervous system of every individual. What I claim is that in a man or woman with an imperfect cerebral organization, an impulse, a passion, a trait of character, which should be controlled by the individual, may become of such exaggerated power that at last it, in verity, dominates the man and forces him to crime; moreover, usually in such individuals conscience has



no existence, and restraint and remorse are alike beyond the conception of the man.

Probably the clearest method in which I can convey the ideas which I have concerning the matter now under consideration is to take an instance of a simple neuropathy and show how closely it is allied to what may be termed "criminal neuropathy." A very large proportion of the human race have in them the capabilities of becoming hysterical. When these capabilities have been so strongly developed, as the result of inheritance, as to appear in early life and to develop into a dominating temperament, although circumstances do not favor their growth, we speak of the hysteria as "inherited." When, however, the hysterical temperament is developed as the result of circumstances surrounding the person during youth and adolescence, we speak of it as "acquired." If the hysterical temperament be developed in very early life, the young nervous system may so set itself into the mould that the temperament or diathesis becomes, as it were, an inherent portion of the nervous system, and the hysteria, though acquired, is incurable. Ordinarily, however, we all recognize that an acquired hysteria, not resting upon an original inherent vice or conformation of the nervous system, is curable, while the inherited hysteria, dependent upon original malformation of the nervous system, stamps its victim for life; and though it may be controlled temporarily, it breaks time and again through all restraint. Hysteria is not madness, but the hysterical temperament is a neuropathy which, in its highest development, ends in insanity. This would I claim for the criminal temperament; it is not insanity, but a neuropathy allied to insanity, which may be as incurable and as uncontrollable by the individual whom it possesses as is a paranoia. As certainly does it rest upon an original or acquired malorganization of the cerebral hemispheres as does paranoia.

As an instance of a mild criminal neuropathy, let us look at what I will venture to call *Dipsopathy*. Love of alcoholic excitement is not insanity, but a normal human attribute; an attribute the degree of whose intensity is almost a race characteristic. Strong and violent in the Northern races, it lies at the basis of a large proportion of their crimes: feeble and but of little import is it in the Southern races, the trend of whose criminality is sexual rather than alcoholic. As hysteria lurks in most human beings, so does also the potentiality of this liquor madness. Usually it is an easily-controlled desire, but under the influence of inheritance it may be so powerful that, without hope and without escape, it dominates the character, the intellect, the Ego: shapes, rules, and relentlessly ruins the man. In such a case dipsomania is an original neuropathy. On the other hand, excessive indulgence in alcohol may so alter the nerve-centres that that which was at first a vice becomes a neuropathy; that which the individual could have controlled, comes to control him through alteration of his nervous tissues.

It is commonly urged, against the view here inculcated, that in those

families in which successive generations drink themselves to death, the men are the only ones to suffer. With a sneer, the question is put, Can a neurosis select one sex? The answer to this is easy. The hysterical diathesis or temperament passes with at least as much strictness to the female as does the alcoholic neuropathy to the male. Alcoholic neuropaths are proportionately as frequent among the females as are hysterical neuropaths among the males.

It is one of the horrors of vice that it thus alters and finally renders incapable of better acts the very nerve-centres of an individual, but it does not benefit the situation for us to refuse to acknowledge the existence of change in the nerve-centres, and to declare that it is a mere lack of the man's will which makes reformation impossible. It is, perhaps, even a greater horror that the lusts and crimes of ancestors should hopelessly twist and warp the nerve-centres of the descendants, but it does not render the situation any more tolerable for us to refuse to acknowledge the fact. A few weeks since I was at the death-bed of a young man whose original intellectual acuteness and power were almost unrivalled among the younger medical scientists and physicians of Philadelphia, but whose inherited dipsopathy, very early in life, thrust him into a career whose end was the lowest of degradations. If the law recognized the existence of alcoholic neuropathy, and provided against it as it ought to do, the doctor could have been saved from his inheritance of doom; supplied with books and scientific material in some proper institution, I believe he would have been one of the greatest scientists this country has ever produced.

Speaking as I do to an assemblage of practical physicians, it is hardly necessary for me to offer proof of these statements and suggestions. These proofs each of you can gather for himself from the memories and the notebooks of his own experience. Usually the dipsomaniac is not controlled; recently I had a case in which circumstances allowed of such control, and I venture to mention it here, because the coming and going of the symptoms were so similar to those of an acute insanity. The patient was a woman, for many years accustomed to all kinds of narcotics—alcohol, opium, chloral. Finally her nervous condition became so aggravated that even our imperfect law allowed of her being placed in an asylum. Under treatment she recovered health; the desire for narcotics seemed to have passed away; she returned home, and nearly eighteen months went by during which she took no stimulant of any form. Suddenly the old appetite returned, at a bound, with uncontrollable force. She being a woman with a determined husband, it was possible to control her, and so she was shut up with nurses, and though she struggled and fought, and failed in health, and seemed at one time almost as though she would die, she was sternly told that “she might die, but no narcotics would be given her.” Seven days and seven nights that woman passed without any food except the spoonfuls of milk that were forced in her, according to the report of the series of nurses not sleeping twenty minutes at a time day or night; screaming and moaning



until her voice was but a hoarse whisper. At last, little by little, the nervous restlessness amounting to madness subsided, the desire for opium faded, the appetite began to return, and after some weeks convalescence occurred.

In the present matter I desire very strongly not to be misunderstood. Vice is not insanity, or a necessary symptom of insanity. Vice is not neuropathy, or a necessary symptom of neuropathy. But vice may be the outcome or the result of a perverted nervous system, or of an undeveloped nervous system, or of a nervous system whose structure has been changed by vice, so that the individual man, the criminal, if you please, has no control of his own being, and cannot avoid the commission of crime. Under such circumstances the vicious act ought to be looked upon as a symptom of disease just as much as is the hysterical convulsion.

Humanly speaking, there is no justice in holding a man responsible for an act which, though criminal, is the result of a structural disorder of the nervous system: a nervous malformation inherited, it may be: the outcome of epilepsy, insanity, alcoholism, crime in parents, or the result of poverty, neglect, disease, the horrible environment of the slums of a great city, acting upon the nervous system in the earliest years of its development. To my mind, it would be as right and as just to hold a man morally responsible for the gouty pain which he has received through inheritance. Gluttony and high living in the progenitor,—gout in the descendant; poverty, crime, alcoholism, insanity, vile hygienic surroundings, epilepsy in the progenitor,—crime in the descendant. This is the teaching of science, and this is what philanthropy is beginning to recognize. This is what even the conservatism of law must acknowledge some time, though it may be in the far future.

Is crime then to go unpunished? Are jails, penitentiaries, executions to become institutions of the past? The answer of such questions naturally leads us to the consideration of what are the objects of punishment. The infliction of pain upon a person who has committed some overt act can only have one of three objects. A pain may be inflicted for the purpose of revenge; or for the purposes of reformation of the individual; or for the purpose of protection of society against the injury wrought by the criminal, including in this thought of protection not merely protection from the individual immediately concerned, but protection from individuals who have a tendency to commit crime, and are to be deterred from such commission by the pain which the commission of the overt act will bring upon themselves. I suppose no one in this Christian community will justify revengeful punishment. There are numerous individuals who commit crime, who are in no proper sense of the term neuropathics; who have the capability of better things in their nervous organization, and for whom there is hope that properly-directed punishment may be of reformatory influence. Such individuals are, however, not the cases of which we are now speaking, and a neuropathic criminal, one who has, so to speak, the criminal diathesis absolutely ingrafted upon his nervous system, is no more to be reformed than is

a case of paranoia to be cured. Here, again, lack of time forbids me elucidating the fact; there are criminals who are not neuropathic, to whom reformation may be possible, but when we read a history like that which appears upon a chance sheet of the penitentiary report, sent me for another purpose, what hope is there for reformation?

"A 6139, twenty-nine years of age, was convicted December 12, 1891, of burglary, and sentenced on two bills to four years and six months. He had previously (A 622, larceny; A 1842, horse stealing) served two terms here, aggregating five years. He had also served three terms in the Bradford County prison. His cousins (A 47; A 1968) each served a term here for larceny, of two years, and one year and eight months, respectively. Another cousin (A 6138) is now here serving a sentence of one year and six months for larceny, and he had previously (A 1039) served a term of two years for the same crime."

I have not seen this individual, but evidently he has the criminal diathesis.

What effect on a neuropathic criminal has the fear of punishment? The gallows scene which ended the life of Guiteau—the most extraordinary ending of one of the most extraordinary neuropathic lives of the century—is enough in itself to show that the neuropathic criminal, driven by the impulses of his diseased brain, recks nothing of consequence, and is not to be prevented by the fear of punishment. Though society has no right to wreak revenge, though the reformation of the neuropath be hopeless, society has the right to protect itself from the evils to be wrought by the neuropathic criminal, and has, indeed, laid upon it the bounden duty to protect its sane members more perfectly than it does at present. If the law recognized the truth of this matter, it would put an end to the perpetual breeding of criminals which is going on in our midst. Generation after generation the Japanese wrestler breeds as true to his type as do the Devon cattle; generation after generation the criminal neuropath, now in prison, now out of it, breeds, in the moments of his freedom, disordered, degenerated criminal nervous systems like his own,—nay, worse than his own, the degeneration ever increasing, until at last nature comes to the relief, and criminal neuropathy ends in lack of fertility, in imbecility, in wild insanity, or in some other catastrophe to the stock, which puts an end to it.

The remedy for this is for the law to recognize the existence of criminal neuropathy as a distinct condition; not calling for punishment or for the infliction of pain, but calling for the isolation of the individual, and the protection of society from his individual acts, and from the possibility of the individual acts of those whom he may beget. When the law-makers comprehend this fact society will begin to protect itself from neuropathic criminals, who to-day, unmolested, work wide-spread distress and ruin. To drink, to ruin the family, to degrade the whole being is as great a crime against God and humanity as it is to steal. Habitual intoxication, the condition of the dipsopathic, is far more serious in its import in modern society



than are the operations of pickpockets and petty thieves. The community revolts against severely punishing the man for being a drunkard. If the law, however, recognized the existence of criminal neuropathy, and recognized dipsopathy as one of its forms, instead of sending the man who has inherited or acquired an alcoholic neuropathy to the House of Correction for sixty days, and then turning him loose on his family and on the community, it would isolate him for life, or until it has been positively ascertained that his nervous centres had regained their normal structures.

Take a case of sexual perversion, with instances of which our Eastern Penitentiary abounds. The sexual pervert is a neuropath, the normal instincts of whose nature are so altered that those passions and feelings which naturally flow from sex to sex pass only towards his or her own sex. In the true sexual pervert there is absolute aversion and disgust for the opposite sex. One case for illustration. John —— is now serving his third term for sodomy in the Eastern Penitentiary. At eighteen, he was one of a "band of fairies" in a house of prostitution; men who sold their bodies for the use of other men precisely as the female prostitute sells her body to the ordinary libertine. Without conscience, without sense of shame, pleasantly and coolly, this man told me the history of his life. How that a woman was to him a sexual horror and source of overpowering disgust. He said, of course the moment he was out of jail he would go back to his old ways; only he would be true and honest if opportunity was afforded him; if I would get him a situation as cook or other suitable employment he would simply get himself a companion (male), and live with him as his wife all his life. Do you not see that in doing this thing this man was, as to his own nature, doing what a libertine does as to his nature when he settles down in marriage? Sodomy is often a pure vice, beginning in masturbation, taught, perchance, in early childhood. John —— is not, however, a masturbator, so at least the very acute prison surgeon believes after careful study. He affects feminine ways; apparently unconsciously he asked me to find him work for which women are commonly employed. A good, docile prisoner, he works through the week, but on Sunday, arrayed in a calico dress he has made himself, he struts or minces up and down his cell, a caricature of a vain, silly woman. He always calls himself Pearl, or speaks of himself as one of the fairies.

What avail is it to imprison for a few months or years such a sexual neuropath? What justice is there in punishing him for crimes which are the outcome of his hopelessly-diseased nervous system,—for instincts and acts which constitute one of the ways in which nature by preventing offspring puts an end to a stock that has become utterly neuropathic and degraded? Reformation and determent are alike impossible; continuous, not intermittent, isolation can alone protect society.

There are, of course, difficulties attending the practical working out of any system of law in relation to the criminal classes, but it does seem to me that it would be possible to have the law recognize that the man who has

been convicted of serious crimes more than once; who has about him, to be recognized by experts, evident signs of neuropathic degeneration, should become not the victim of criminal law but the ward of the criminal law; to be isolated, kept in criminal asylums, made to work sufficiently for his self-support; not for the purposes of punishment but for the purposes of the protection of society.

In concluding these remarks, I want to say that I am not one of those who have any special sentimental sympathy or regard for the criminal. I believe that the highest duty of the law is the protection of the sane, responsible citizen from the acts of the insane neuropath; and I believe that this protection should extend to the putting to death of some of these neuropaths with precisely as little idea of punishment or of revenge as would be exercised in putting to death a mass of microbes generating a pestilence. Death comes to all men. To the neuropath, whose past has been the outcome of an inherited, perverted nervous system, over which he has had no control, whose present must be one of hardship and of suffering, whose future is free from any fear or responsibility for acts done, death is not an evil. In Philadelphia we brand such murderers with the infamy of sanity and hang them. I have followed them up to the very foot of the gallows: in the shadow of death have talked to them of the terrors of hell: and have seen them to the very end, go to the hangman without remorse, without fear, without suffering, with seemingly absolute indifference.

Some of our alienists may remember the case of the paranoiac, Smith, the joiner, reported by Dr. Yellowlees, some years ago, in the *Edinburgh Medical Journal*. The man whose whole life was a study how to kill, and whose perpetual joy it was to gloat over the thought and hope of a cruel and bloody revenge; who could only be removed from the cell in which he was placed by opening the roof and entangling him in ropes; who, during twenty years, was only prevented from murder by absolute precaution; indeed, who was not prevented, and who, during that time, did on various occasions stab, cut, and maim physicians, attendants, any one who chanced to be about him.

The literature of medicine is full of cases like these. The number of physicians and attendants killed by homicidal lunatics is in the aggregate great. Some of you may remember the unfortunate Jimmie Burk, who was burned in his cell in the great fire at the Philadelphia Insane Asylum. How many men he had killed before he was incarcerated in that asylum was not known, but in spite of precaution and watchfulness, in spite of isolation, straps, bonds, and all possible restraint in the hospital, he had managed to kill two attendants, besides assaulting various others. Why should the community be taxed to pay attendants to endanger their lives while waiting upon such human tigers? What of the widows and orphans that are made? Quietly, in some way, by process of law, sane or insane, such a creature should, in my opinion, be placed beyond the possibility of doing injury to others.



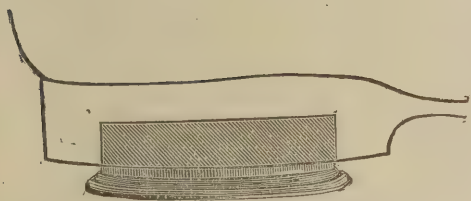
*A DEVICE FOR THE CURE OF PIGEON-TOE.<sup>1</sup>*

BY WILLIAM BARTON HOPKINS, M.D.,

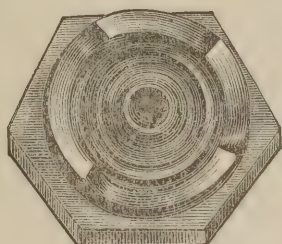
Philadelphia.

AMONG the minor defects of the lower extremities which, though unsightly and more or less detrimental to their function, are frequently regarded as too unimportant to require surgical intervention by either the application of apparatus or the performance of operation is pigeon-toe.

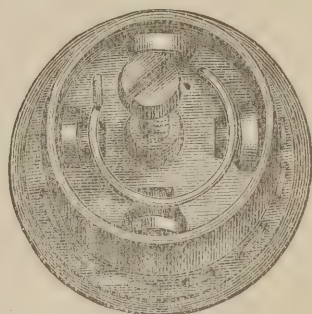
When the tendency is very slight, repeatedly reminding the child that he must turn his toes out is at times sufficient to improve the condition, but even in these cases, particularly when the tendency exists in one foot more than the other, the child grows up to manhood with the defect still present, except when he is making a conscious effort to counteract it. Though the condition is common, I think it may be truly said that far more cases of club-foot, knock-knee, and other grave deformities of the lower extremities are cured than of pigeon-toe. This is doubtless largely due to the unimportance which parents attach to it, and partly, perhaps, to the fact that no simple and effective means have so far been contrived to correct the tendency.



Heel-swivel for pigeon-toe.



Shoe portion.



Heel-piece.

The apparatus shown in the accompanying cuts I have had in use for over two years ; its mechanism is apparent at a glance. In the heel of the shoe is placed a steel box containing four inclined planes, while in the heel proper is fitted a second steel box containing four pulleys and a steel spring. When the heel is planted upon the ground, the weight of the body causes the concentrically-arranged wheels, each to run down its appropriate inclined plane, the foot is forcibly thrown out, and when it is again lifted the spring causes the heel-piece to recover its original position. Fearing that steel would rust, I made the original working model of phosphor-bronze, but the steel one here shown has been in use for two years, having been placed

<sup>1</sup> Read before the American Academy of Surgery, May 2, 1892.

in three shoes during that time, and now is little the worse for wear. Its effect is very satisfactory, it causes the child no inconvenience, and the only precaution required to prevent its getting out of order is not to use it when walking in muddy roads.

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## BONE-GRAFTING.

BY THEODORE A. MCGRAW, M.D.,

Professor of Surgery in the Detroit College of Medicine, Detroit, Michigan.

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ALTHOUGH the practice of supplying defects in bone, by transplanting bone from the lower animals, is not new, it has never yet gained a general recognition by the profession. Not only are the methods of its performance still questions for debate, but its value and usefulness have been doubted. It has seemed to me that the whole subject of the transplantation and grafting of bone might be thoroughly investigated *de novo* with profit to the profession; but in this paper I shall attempt no more than to put on record two cases in which I have attempted to repair defects in human bone by grafting in fragments of living bone from one of the lower animals.

There are, as is well known, two radically different methods of using bone in plastic operations. In the one, dead bone rendered perfectly aseptic is implanted into the living; in the other, the living bone is used, in the hope that it will retain its life in its new quarters, and become adopted by the organism in which it is implanted. In the first instance, the dead bone can have no other properties than those pertaining to any aseptic foreign substance of like physical qualities. It may afford support by binding broken bones together; it may protect from injury by covering an otherwise exposed tissue, as in defects of the skull; or it may fill up a bone cavity with an aseptic absorbable material, in which granulations and blood-vessels may grow luxuriantly and develop rapidly into bone, serving thus as a scaffolding for the building of new tissue; but in no case where dead bone is used can its part be any other than that of a passive instrument. It may, indeed, irritate the neighboring structures and stimulate them to a more vigorous cellular proliferation, but it does so precisely in the same way as a bullet or any other foreign substance. All that is active in the process pertains to the living organism, which reacts with greater or less irritability to the touch of the strange material. The surgeons who of late have devoted the most attention to the implantation of dead bony substances in the living organism are Thomas Glück, of Berlin, and Nicholas Senn, of Chicago. The methods of the two surgeons, however, are very dissimilar. Glück has sought to supply organic defects in bones and joints by replacing the missing parts with large masses of inert aseptic



substances, such as ivory. Ivory pencils were driven into the long bones to bind them together, and ivory joints were fitted into resected knees, and the skin made to heal over them, in the hope of thus preserving the motion of the articulation. The immediate effects of these operations were very encouraging, but their ultimate results were such that in every case, I believe, the foreign bodies had to be removed. Dead ivory will, indeed, heal in and become buried in the organism, and if so placed as to bear no pressure, and be subject to no motion, may remain thus encysted for an indefinite length of time; but whenever it is made to press unduly on the adjacent tissues or to rub them, irritation is produced, which will inevitably lead to suppuration and ulceration.

Senn decalcifies bone, makes it aseptic, and imbeds it in either large or small pieces in aseptic bone cavities, and aims in this way to stimulate the growth of blood-vessels and granulations, and to afford them a support until they can be transformed into bone. During this process, the implanted material becomes absorbed. This method seems to have had some success in securing the rapid healing of bone cavities. It is to be remarked, however, of both these methods that other material could be substituted for the ivory or decalcified bone and produce the same results. Sponge, properly prepared, would be an excellent material for that kind of service.

In using living bone, the surgeon aims to introduce an active instead of a passive material into the living tissues. The attempt has been made by Dr. Phelps, of New York, to transplant a large piece of bone from a dog into the leg of a boy. The difficulties in the way of attaining success by this method are great. Large pieces of bone separated in the same way from the shaft, and permitted to remain *in situ*, would probably die in most cases in spite of all care,—much more so, of course, when, in addition to the injury done, the fragment is dislocated and subjected to the strain necessary to keep it in place in the limb of another animal. The difficulty, indeed, of keeping two animals fastened together in a plaster bandage aseptic, would in itself be a serious one, while that of keeping the limbs absolutely immovable would be almost insuperable.

While the failure of this method, hitherto, would not necessarily preclude its ultimate success, it is nevertheless impossible to be very hopeful of its future. It has seemed to me that the grafting of many minute fragments of living bone into bone cavities, or between the prongs of ununited bones, would promise much more. There is no good reason why small pieces of bone from the lower animals, nearest to man in structure, should not heal into the human organism and retain their vitality. Their minute size would enable them to get their nutriment by imbibition. Buried in the tissues and supported by them, they could easily be made immovable, and at the same time lie surrounded by and bathed in a serous effusion, and it is not too much to suppose that the bone-cells so placed might not only live but also grow and even multiply. Even though these vital powers should be retained in the most limited degree, the living fragments

would, nevertheless, serve the purpose of stimulating repair better than we can think possible of the decalcified dead bone of Senn. Acting on this hypothesis, I have in two cases, one of ununited fracture with necrosis and loss of substance, and one of necrosis of the skull involving a large area, sought to supply the defect by grafting living rabbit bone, in minute fragments, into the human body.

CASE I.—Alexander Schulte, aged seven years, was brought into St. Mary's Hospital on October 1, 1890, with the following history: He had fallen two weeks before, and broken his left leg at the upper part. A doctor, called in, diagnosticated a fracture of the tibia, and applied paper splints to the leg. The fracture does not seem to have been originally compound, but, either from neglect or from malnutrition, became the seat of a suppurative inflammation. I found, on examination, the tibia broken just below the line of the epiphysis, and pus discharging freely from a sinus. I made a free incision, and found the bone necrosed and in loose pieces through nearly its whole thickness. When these were all removed there was a great loss of substance, and a large gap between the uppermost and lowermost fragments, which, to a very small extent, was occupied by two prongs of bone which projected, one from the upper fragment downward, and the other from the lower fragment upward, and overrode each other to the extent of about an inch. These prongs were covered with granulations and apparently healthy. The fibula was intact, and it was, therefore, impossible to join the fragments together without first dividing the companion bone. This I did not care to do, on account of the anæmic and bad general condition of the child. I contented myself for the present with rendering the wound as aseptic as possible, stuffed it with iodoform gauze, and applied a plaster bandage from the middle of the thigh to the foot. The wound was dressed through a window cut in the plaster, and from the beginning did well. The pain ceased. There was little or no further discharge of pus, and the child began, under the better care and more generous diet, to improve rapidly in his general health. Early in November the father insisted on removing the child to his home. Before permitting him to leave I removed the plaster and carefully examined the leg. The wound had healed with the exception of a narrow strip of granulations at the bottom. The probe could find no opening to the bone excepting at the lowermost corner of the cut, where the bone appeared for a short distance to be denuded of its periosteum. I was disappointed in finding absolutely no evidences of bony repair, which I had hoped might take place from the periosteum and the remaining prongs of which I have spoken. The leg was incased again in plaster, a window cut for dressing the wound, and directions given as to its care. The father was directed to bring him to the hospital for examination once a week, but nothing more was seen of him until January 1, 1891, when the child was brought in again, much worse in his general condition and with a spreading necrosis in the lower fragment. This involved the shaft below the prong, which remained healthy.



The old cut had healed, but I was obliged to make a new one from its lowermost point downward, and to remove some more dead and diseased bone on February 4, as there was no union whatever at the seat of fracture, and I tried to excite some action by rubbing the projecting prongs violently together. I ventured to do this, although the wound below made by the last operation had not quite healed, as it was evident that nature unaided would not be able to replace the lost bone. On February 18, as the situation was unchanged and as there was absolutely no bony repair whatever at the seat of fracture, I planted in some bone-grafts from a rabbit's tibia in the following manner. The boy was put under an anæsthetic, and an incision made about an inch in depth and three inches long between the two prongs of bone which projected, one from the upper and the other from the lower fragment. Before the hemorrhage was entirely controlled, a healthy rabbit was killed, its tibia quickly extracted and denuded of all its soft coverings. The bone was then placed in a disinfected mortar and pounded until it was broken into minute fragments. These were then placed in the depth of the wound along its whole length and pressed firmly into the tissue. The flesh, rising above them on each side, held them in place and protected them from injury. They were thus in the most favorable condition for maintaining their vitality. In contact with the living cells on both sides, and bathed in the nutritious exudate which always flows from a fresh cut, they could imbibe sufficient nutriment without the aid of blood-vessels. The wound was covered with iodoform gauze and the limb was again incased in plaster. The new wound did extremely well from the beginning. There was almost no discharge, and it was rarely necessary to change the dressings. On March 20, when I first removed the plaster, the wound was nearly healed, and I was pleased to find that there was more firmness at the seat of fracture and a beginning consolidation. Far below the wound, however, there was a sinus, discharging a small amount of pus and leading to a denuded spot in the shaft of the bone. This sinus was opened and the bone scraped. The limb was placed again in plaster and the child allowed to go on crutches. On April 15, a fragment of dead bone escaped from the sinus at the middle of the shaft, but not one fragment of that implanted had been discharged, and the new tissue was so solid as to barely permit of a bending at the point of injury where previous to the grafting there had been the freest mobility. On May 27, a little over three months from the time of bone-grafting, the leg had become so firm that the patient could walk upon it without crutches and unaided. The wound was quite well, but the sinus below still discharged a little pus. I chiselled out some denuded bone at the bottom of the sinus. He recovered speedily from the operation, and on June 26 left the hospital, having run about the wards with full use of his leg from the time of the previous dressing in May. The sinus below was not yet entirely healed.

Once since then the boy presented himself for examination. There was then no material change in his condition. One of the most remarkable

features of this case is the fact that an ununited fracture with great loss of substance was made to heal by grafting in bone from a rabbit while there was two inches below the fracture a progressive ulceration and necrosis of the shaft of the bone.

CASE II.—I was asked by Dr. Gailey, of this city, to see with him, at Harper Hospital, a case of syphilitic necrosis of the skull. I found a man, sixty-four years of age, with a round spot of denuded and dead bone just to the left of the median line and involving the parietal tuberosity. The scalp was wanting over nearly all of this surface, the necrosis extending for a few lines under the overhanging skin. He had a partial paralysis of the right side and showed some signs of dementia; but as I do not propose to discuss this case in full, and shall limit my remarks to what especially concerns the subject of this paper, I shall refrain from describing in detail those symptoms which could have no possible bearing on the question of bone-grafting.

The dead bone was still firmly attached to the living.

I proposed to Dr. Gailey that he should remove the dead bone, and that we should endeavor to replace it by grafting living rabbit bone in small fragments on the dural surface.

This was accordingly done on October 17, 1891. Dr. Gailey removed the whole necrosed piece with trephine and chisel. Underneath, in about the centre of the area, was found a gumma occupying the whole thickness of the dura and about as large as a silver quarter of a dollar. In the mean time I had killed a rabbit and removed some of the bones of the skull. These proved to be too tough to break in the mortar, as I had done with the more brittle tibia, and I was obliged to cut them in minute pieces with a bone-forceps. They were then dropped immediately into a solution of warm carbolyzed water. The dura was then covered with these fragments, except at the spot occupied by the gummy tumor. The greater number of these pieces of bone lay exposed on the surface of the dura, but some of them were placed under the overhanging edge of skin, and were thus, so to speak, embedded between the dura and the scalp. The whole surface was then dusted with iodoform and covered with iodoform gauze. The course of the wound was absolutely aseptic. There was no discharge whatever. The dressings were not changed until October 24, when the fragments of bone were found to be firmly adherent to the dura. The second dressing was on October 31, and the third on November 5, and after that the dressings were removed and the wound was examined about once a week. The pieces of bone became firmly attached to the dura and the most of them became covered with granulations. Those which were embedded between the scalp and the dura healed firmly in place. Of those exposed, a few which were adherent on their lower surface continued on the upper to show the smooth surface of bare bone.

On December 5, when Dr. Gailey removed four of the least promising of these pieces, he found them to be so adherent as to require considerable



force to detach them. On November 7, the man was seized with severe epileptiform convulsions and afterwards showed a marked degree of aphasia, phenomena which indicated lesions at other points within the cranium. With these and their significance I have nothing to do in this paper. He recovered, and walked the halls as usual with some paresis, aphasia, and mental weakness.

On examining the wound on January 5, eighty days after the operation, I found the condition to be as follows :

The skin around the edges had grown fast to the underlying dura, inclosing all of the bony fragments which had been placed under it. The whole edge felt hard and firm, but whether from the formation of new bone or not must remain uncertain. Over the exposed red surface of the dura mater could be seen little scales which felt rough and firm to the touch. These were the bone-grafts which covered the whole surface except where the gumma had been. The gummy tumor had been touched by Dr. Gailey with a mild caustic, and the surface had become smooth and red. A few of the bone-grafts were not covered by granulations, but were firmly attached to the dura. The dura was much firmer than at the time of operation, and in one spot was fairly unyielding, but I cannot assert that there was actually any formation of new bone.

I regard it as demonstrated by these two cases that small pieces of rabbit bone, implanted, while living, into human tissues under strict antiseptic precautions, will heal in and become, for the time being at least, integral portions of the organism.

Their after fate must remain, of course, doubtful until exact investigation shall demonstrate its nature. The first case shows conclusively that when put between the fragments of an ununited fracture, they may cause the development of new bone. How the process takes place is another question. It may be that the bone-cells thus embedded may absorb nutriment by imbibition, may grow and propagate cells of similar character. This has, at least, not been demonstrated to be impossible.

It may be, on the other hand, that they serve a merely temporary purpose as a stimulant to the tissues in which they lie, causing more vigorous cell-proliferation and activity, and, at the same time, acting as a scaffolding for the growth of new blood-vessels and granulation tissue. If this were all that could be accomplished by bone-grafting from living animals, it would seem to me to entitle it to be accepted as an acknowledged surgical procedure. It is far easier to kill a rabbit, after making the beast thoroughly aseptic, and to procure the fresh, living aseptic bone, than to manufacture decalcified bone after Senn's method ; and I, for my own part, cannot doubt that the fragments of living aseptic bone would answer the purpose of a stimulant and a scaffolding better than dead decalcified bone. We have, besides, the possibility that the living bone may take an active part in the bone-regeneration, even though it should undergo afterwards a rapid absorption.

As regards the technique of the operation of bone-grafting there is much to study. We may question,—

1. Whether young bones, or even cartilage, might be better or worse adapted for this purpose than old bones.

2. Which of the many animals at our disposal would yield the most satisfactory results.

3. Whether this process would be most likely to succeed in young or old patients, and what effect, upon its success or failure, we should have to expect from the existence in the patient of various morbid conditions, such as syphilis, tuberculosis, and the like.

The first of these two cases would seem to demonstrate that it will prove a most invaluable procedure in the treatment of ununited fracture in young persons. We may hope that it will prove equally efficient in causing the rapid healing of bone cavities. It is evident from the study of the two cases that an important point in securing success is to surround the bone-grafts with living tissue. The more thoroughly they are buried, the more intimately they come in contact with neighboring structures; the more constantly they are kept bathed in nutritive fluids, the greater will be their chances of living, and exerting an active influence on the tissues in which they lie buried; and, on the contrary, exposure to the air, deficient supply of nutritive fluid, and insufficient support must lessen their vitality and their capacity for adapting themselves to their new surroundings.



# CLINICAL LECTURES.

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## *PNEUMONIA.*

CLINICAL LECTURE DELIVERED AT THE NEW YORK POST-GRADUATE SCHOOL.

BY ANDREW H. SMITH, M.D.,

Physician to the Presbyterian Hospital and Professor of Clinical Medicine in the New York Post-Graduate School.

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GENTLEMEN,—It so happens that we have in the wards at this time patients illustrating three divisions into which cases of pneumonia may be grouped at the bedside. These divisions are based upon the fact that we have in pneumonia both a systemic infection and a local lesion. The systemic infection is not necessarily in proportion to the local lesion,—that is, we may have a severe general infection, with comparatively little implication of the lung; and conversely, we may have a very large implication of the lung with but very few evidences of general infection. This affords the basis of two of these divisions. We have also pulmonary and circulatory conditions, which are secondary, and which constitute the principal factor in the third division.

The first case I will show you is that of a man, twenty-eight years of age, of previously good health, and temperate in his habits: he is now in the fourth day of the disease. His initial chill, four days ago, was of moderate severity, the pain in the chest was considerable, the temperature rose on the second day to  $103.5^{\circ}$ , and his pulse to 102, and on the following day the temperature reached  $104.5^{\circ}$ , and his pulse 116. At this time the respirations were 32 per minute. There is in this case a remarkable absence of the prostration which we see in many cases of pneumonia. The patient, on arriving at the hospital, insisted upon walking from the carriage to the elevator, and from the elevator to his bed in the ward. You will perceive now that when he is asked to sit up for the physical examination of the posterior portion of the chest, he rises without any evidence of feebleness; his hands are perfectly steady, and when his tongue is protruded there is no tremor. He is entirely capable, if allowed to do so, of going to the closet. His mind is perfectly clear. When asked how he feels, the reply is, "First rate." On examination, we find that on the right side, with the exception of the space above the fifth rib in front, and above the middle of the scapula behind, there is evidence of consolidation

over the whole right lung,—that is to say, we have dulness on percussion and tubular respiration. Now, in this case we have a large mass of lung implicated, while at the same time the constitutional symptoms are relatively slight. We are justified, therefore, in considering that in this case the force of the infection is comparatively moderate, and that the local lesion is the more prominent factor. On examining the heart, we find that the pulmonary second sound is decidedly accentuated, indicating that there is marked obstruction to the pulmonary circulation on the one hand, and, on the other, a vigorous action of the right side of the heart; the blood is propelled into the pulmonary artery with force, but, meeting resistance in the pulmonary circulation, there is a corresponding recoil of the column of blood against the pulmonary valves, causing a loud and sharp pulmonary sound.

This patient's urine has been examined, and has been found free from albumen. The test with nitrate of silver shows the usual absence of the chlorides.

Now, in a case of this kind, there is very little necessity for treatment so long as the symptoms continue as we find them at the present moment. Such cases will recover in the majority of instances under whatever form of treatment may be adopted, so long as no plan is instituted which is in itself harmful. An expectant treatment will meet all the demands of the case; the most that will be required will be attention to proper alimentation, and perhaps at the outset, during the time that the pain in the chest is severe, such local remedies as dry-cupping, sinapisms, strapping the chest, or other measures which have for their object the relief of pain.

The next case that I have to show you is one in which the conditions are very materially different from those which we have just considered. This patient is a man, thirty-five years of age, of fairly good previous health, a car-driver by occupation. His initial chill occurred three days ago; it was very severe, lasting, as he stated, more than an hour; it was followed by very marked prostration. From the moment of its occurrence there was a feeling of intense weakness; he took to his bed immediately, and when removed to the hospital, had to be carried from his bed to the carriage, and from the carriage he was taken on a stretcher to the ward, and had to be lifted into bed. You find him now exhibiting the evidence of extreme muscular and nervous prostration. We place a glass of water in his hands, and in attempting to carry it to his lips he seizes the glass with both hands, nevertheless there is so much tremor that a portion of the water is spilled. The tongue also is tremulous. He is at times delirious, with a busy, active delirium, a constant desire to get out of bed, but, should he accomplish this, he would fall helplessly upon the floor. His temperature on admission was  $103.5^{\circ}$ , his pulse 132, and his respiration 30. The slowness of respiration as compared with the pulse shows that it is not the amount of lung implicated which constitutes the gravity of the affection; the pulse being so much more frequent than the respiration indicates that the cardiac ganglia and probably the heart muscle are directly affected by



the poison. On examining the heart, we find that the first sound is extremely feeble, the pulmonary sound is almost inaudible, the pulse is very small as well as frequent. The urine is found to be albuminous. It is stated that at the onset, immediately after the chill, there was vomiting. These conditions together indicate a very grave implication of the nervous system, showing an intensity of infection in marked contrast with that of the previous case. On physical examination, we find, on the right side, dulness and tubular breathing in the summit of the right lung, extending as far down as the fifth rib in front, and nearly to the angle of the scapula behind; in other parts of the lung there are a few moist râles, and also occasionally throughout the left lung. Still, the evidence of the physical signs is that the action of the respiratory apparatus is but moderately impaired. The gravity of the case depends upon the virulence of the infection, the direct poisoning of the nervous and muscular systems. The muscular weakness, which is so marked elsewhere, extends to the heart, as is indicated by the small and very frequent pulse, and by the character of the first sound. It is in this that the danger to our patient lies; it is not that his respiratory function is so far impaired as to create danger in that direction, but the danger is of primary heart-failure, due to the poisoning of the nervous system and of the muscular fibre. The whole heart in this case, both the left as well as the right side, is markedly feeble in its action, and in our treatment the effort must be to keep up the cardiac action until the force of the infection is spent.

Cases of this type are most apt to prove fatal during the stage of high temperature. If we can tide them over until defervescence takes place the prognosis becomes much more favorable.

An early resort to alcoholic stimulants is required in cases of this type. Alcohol in moderate quantities is doubtless a food, and one that is easily assimilated, and in the depressed condition of the nervous system which affects materially the function of digestion, it is important that the food given should be of a character to be readily digested and assimilated. Alcohol has the effect of lowering the arterial tension, and for this reason is especially valuable under circumstances in which the cardiac muscular fibre is inadequate to the task of forcing the blood through the capillary system. Carbonate of ammonium is also indicated. There are many drugs which have the reputation of being cardiac tonics, but we must remember that none of this class of remedies is able to supply anything directly to the tissues of the heart; they act simply upon the innervation of the heart, forcing it for the time being to increased activity, an activity which implies necessarily increased molecular waste and ultimate exhaustion. In the use of these remedies, it is important that they should at no time be pushed beyond the imperative needs of the moment, remembering that there is but a certain amount of energy which we can call upon, and if that amount is early exhausted, the subsequent result must be disastrous. The drug which is first thought of in cases of anticipated heart-failure is digitalis. This

drug which is capable of being most useful is also capable of doing the greatest harm. While it undoubtedly forces, for the time being, the cardiac muscle into more vigorous contraction, it at the same time diminishes the calibre of the peripheral vessels, and thus, while adding to the force of the heart, it adds also to the work which the heart is required to perform. Doubtless, in many cases, therefore, we lose more in one direction than we gain in the other; for, while the digitalis has supplied nothing to the nutrition of the heart fibre, the extra work which the heart has been compelled to do, on account of the increased peripheral resistance, constitutes a direct expenditure of energy with a molecular waste which cannot be regained. We may, however, by combining with digitalis an arterial relaxant, obtain the action of digitalis upon the heart without at the same time the disadvantage of increased peripheral resistance. Therefore, it should be a cardinal rule in these cases that digitalis be not employed except in combination with nitroglycerin, sodium nitrite, aconite, or some other drug having the power of relaxing the arterioles. There is, however, one advantage which digitalis possesses in a marked degree, and that is that it lengthens the period of diastole, during which the heart muscle is nourished through the coronary vessels. A judicious use of digitalis, therefore, favors the nutrition of the heart, a point of the greatest possible importance, for when the heart is beating as rapidly as one hundred and thirty or one hundred and fifty times per minute, the opportunity for receiving blood into its own structure is correspondingly limited. Caffeine acts in somewhat the same manner as digitalis, and probably with less effect upon the arterial tension. A valuable agent in these cases is strychnine, although it acts simply through the cardiac centres, and serves only to give a temporary stimulus to the heart's action without contributing to its nutrition. Our employment of drugs with reference to the cardiac condition will therefore embrace, on the one hand, such as stimulate the action of the heart, and, on the other, such as diminish the tension in the circulation. A favorite combination of this kind is that of digitaline, strychnine, and aconitine. These drugs may be given, the first, in the dose of one-sixtieth of a grain, and the two latter in the dose of one one-hundred-and-twentieth of a grain, every hour until the frequency of the pulse is reduced to about one hundred by the digitalis, while the aconite, acting upon the heat-producing as well as the vaso-motor centre, brings down the temperature to about 101°.

The "sedative dose" of calomel (twenty-five to forty grains), so successfully employed by Dr. Leaming, has often rendered us good service in cases of this type. The promptness with which it acts upon the temperature suggests a neutralizing effect upon the toxic material in the blood. It should be given dry upon the tongue, and fluids should be withheld for two or three hours, to prevent a cathartic effect.

When the temperature remains high the external use of cold is often beneficial. A convenient method of applying cold is by means of a coil laid over the abdomen.



Our next patient is a man, sixty years of age, whose habits have been irregular, and whose constitution has been broken down with alcohol. He is now in the sixth day of the disease; the chill was not well pronounced; there was but moderate pain in the chest, but early in the case the difficulty of respiration became a prominent factor. We find him now with a temperature of  $102^{\circ}$ , a pulse of 130, and with 48 respirations to the minute. The face is pale, the lips blue, and the superficial veins are distended. On physical examination, we find that the lower lobe on the left side is for the most part consolidated; we find also that there are abundant mucous râles and slight dulness throughout the remainder of the left lung, and also throughout the right lung. We have, therefore, a condition of pneumonic consolidation in the lower lobe of the left lung, with œdema more or less pronounced in the remainder of that lung and throughout the other. This condition necessarily implies a very grave impairment of the respiratory function. The amount of air which finds its way to the pulmonary vesicles is reduced to an extent which seriously threatens death by asphyxia. On examining the heart, we find by percussion that the right chambers are distended, the area of cardiac dulness being increased in the direction of the sternum. The pulmonary second sound is extremely feeble, being scarcely audible, obscured as it is by the mucous râles in that locality. The examination shows an increased area of hepatic and of splenic dulness, indicating that both the liver and spleen are distended with blood. The urine is albuminous. In short, we have everywhere the evidence of venous repletion. There is more blood in the veins and less in the arteries than in the normal condition. The obstruction to the pulmonary circulation calling upon the right ventricle for increased action, that portion of the heart is especially exposed to exhaustion. Thus, although we have the obstructive conditions which would lead to an increased accentuation of the pulmonary valve-sound, we have, on the other hand, such feebleness of the right ventricular systole that the blood is not thrown into the pulmonary artery with sufficient force to produce the recoil required for the normal pulmonary sound.

The leading factor in this case, therefore, is the impairment of the respiratory function, and the consecutive exhaustion of the right side of the heart. The danger is that the right heart will fail. And yet the original area of pneumonic consolidation was not great, not nearly so great as in the first case which we examined; the difference lies in the condition of the circulatory apparatus, due, in the first instance, to the age of the patient, and, in the second, to the alcoholic habit which has impaired the whole mechanism of circulation. With a vigorous heart and sound blood-vessels, the amount of pulmonary consolidation present would have constituted but a trifling danger. We have not in this case, either, the evidences of virulent infection, and the nervous system is not markedly implicated. The gravity of these cases cannot be appreciated by a study of the pulse, for it is not the left ventricle which is bearing the brunt of the battle, but the right, and

it is not the failure of the heart as a whole which we have to fear, but a failure of the right heart, due to the extraordinary demand made upon its energy. What the finger upon the pulse indicates in regard to the condition of the left ventricle, the use of the stethoscope over the pulmonary artery will indicate with regard to the condition of the right ventricle. If the pulmonary valve-sound is distinct, it at least indicates sufficient power in the right ventricle to propel the blood into the pulmonary artery with force enough to distend the artery sufficiently to produce by the recoil an energetic closure of the semilunar valves. A diminution of the clearness of the pulmonary second sound, in the course of any disease involving obstruction to the pulmonary circulation, implies one of two things, viz., either a diminution of resistance which the blood meets with in passing through the lungs, or a diminution in the power of the right ventricle. Which of these two conditions is present can be determined by the general condition of the patient, and especially by the condition of the respiration. In the first case, there will be general improvement and diminished respiratory distress, and in the second case, there will be increasing failure of the general strength, and increasing embarrassment of respiration. The prognosis in the first condition is, of course, encouraging; in the second, it is altogether bad. Extinction of the pulmonary second sound with increasing respiratory distress, simply means that the right heart is becoming fagged out by the labor required to force the blood through the obstructed pulmonary circulation. Death under these circumstances takes place by failure of the right heart, and the post-mortem shows the right cavities and the pulmonary artery distended with blood. In a private note which I received a few days ago from Dr. Daland, of Philadelphia, he describes the post-mortem appearances in three cases of this kind, which he had recently observed. The right auricle and ventricle and the pulmonary artery were crowded full with a substance resembling currant jelly.

The tendency to an early unfavorable termination in these cases is not so great as in the preceding type. Defervescence is not so marked or so complete, and its occurrence does not affect the prognosis so favorably. The mechanical conditions are but little affected by the temperature, and death often occurs when the pyrexia is very slight.

The treatment in this class of cases must be directed primarily towards sustaining the power of the right heart, and diminishing as far as possible the resistance in the pulmonary circulation. Venesection would naturally suggest itself as a relief for the over-distended venous system, and, undoubtedly, in many instances it might be practised with much benefit to the patient. Some years ago Niemeyer asserted that, notwithstanding the prejudice against venesection, he would bleed in any case in which collateral fluxion was developed in the portion of the lungs unoccupied by consolidation. The idea that venesection must necessarily be restricted to sthenic cases, and to the early stage, has doubtless stood in the way of a very valuable therapeutic resource. The removal of a portion of the blood from the



over-distended venous system would necessarily diminish *pro tanto* the labor of the right ventricle, and thus afford it an opportunity to recover in a measure from its exhaustion. But a similar result can be obtained without the spoliative action of the lancet, for by increasing the area of the arterial system, it is possible to afford accommodation in it for a large proportion of the excess of blood accumulated in the veins. This is accomplished by the use of remedies which reduce the arterial tension, and it is precisely in this class of cases that the vaso-motor depressants are supremely useful. The effect of an appropriate dose of nitroglycerin upon the color of the lips and the distention of the veins in a case of threatened asphyxia from pneumonia has only to be witnessed to be thoroughly appreciated. By the use of these agents the pulse is changed from being small and creeping in character to the large, soft condition of low arterial tension. With this change the respirations will be found to be less frequent and less labored, the mucous râles in the chest will diminish, and the entire function of respiration and circulation will undergo marked improvement. Digitalis in these cases is absolutely contraindicated, unless its effect upon the vaso-motor system is thoroughly counteracted by the use of arterial dilators. The uncontrolled effect of digitalis is to empty the arteries into the veins, whereas our effort should be to empty the veins into the arteries. But digitalis is called for whenever the rhythm of the heart-beats is deranged, and especially if the pulse becomes intermittent. A very small amount will generally restore the rhythm, and the smallest quantity that will do this should be employed. In every case, however, it should be given in such combination as will prevent an increase of arterial tension.

Of the drugs that cause dilatation of the arteries, the most promptly acting is nitrite of amyl, given by inhalation, or nitroglycerin by the mouth, while the most enduring effect is obtained from sodium nitrite. A good plan is to lay a foundation with the latter, giving two grains every two hours, and to supplement this with nitroglycerin, in doses of one one-hundredth of a grain as occasion arises.

In these cases, also, alcohol is of importance, for the reasons already given, and in the case of those having the alcoholic habit there is the additional necessity which is imposed by the fact that the withdrawal of alcohol under these circumstances would necessarily still further impair the vital forces, which habit has made dependent upon the supply of stimulants. Oxygen inhalations are often of extreme service. The effect of oxygen appears to be not only to satisfy the respiratory demand with a less bulk of air, but also to facilitate the circulation of the blood through the lungs. It is well known that blood highly charged with the products of respiration circulates with difficulty, and in proportion as we are able to overcome this condition by artificial additions of oxygen to the air inhaled, we facilitate the pulmonary circulation, and thus lessen the labor of the right ventricle. The action of oxygen, therefore, is twofold. It is not unusual under its exhibition to find the respirations becoming

markedly less frequent, and, at the same time, the mucous râles throughout the lungs lessen to a great degree. The first of these effects is due directly to the increased supply of oxygen to the air-cells; the second, to the improvement in the condition of the blood, by which it moves with greater ease through the pulmonary capillaries, thus diminishing the tension in those vessels, and with it the tendency to transudation.

It is also very important not to burden the system with more nutriment than is required. An excess of food in the stomach gives rise to flatulence, which adds to the embarrassment of the respiration, while an excess of nutritive material in the blood, beyond what can be assimilated under the existing condition of deficient oxygen-supply, only makes the pulmonary circulation more difficult, and increases the dyspnœa.

Of course the characteristic features of the last two conditions may be, and often are, associated in a given case. We may have an intense toxic infection coinciding with great pulmonary and circulatory embarrassment, a combination that is extremely grave. To the weakness of the heart depending upon vital causes is added the exhaustion of the right heart from its effort to overcome a mechanical obstacle. Only patients with exceptional vitality stagger through under this double burden. In treating this condition the resources of the physician will be taxed to the utmost. The inhalation of oxygen, artificial respiration, retaining the blood in the extremities by means of ligatures about the limbs,—all these, in addition to the means already referred to, may be placed in requisition, and will occasionally prove successful.

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## *MITRAL INSUFFICIENCY AND THE RATIONALE OF ITS TREATMENT.*

CLINICAL LECTURE DELIVERED AT THE MASSACHUSETTS GENERAL HOSPITAL.

BY F. C. SHATTUCK, M.D.,

Jackson Professor of Clinical Medicine, Harvard University.

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I WILL give you first the history of this boy, who entered the hospital December 31. He is eighteen years of age; goes to school. His father had a cough. Five sisters and one brother are in good health. Six years ago for five weeks he had pain in the knees and ankles,—rheumatism, as he calls it,—none since. He felt perfectly well until two and a half months ago. On the 19th of October he fell from a chestnut-tree, forty-one feet and six inches, and informs us that if he had fallen six inches further it would have killed him. As it was he broke a rib on the right side. Two weeks after his fall he began to have dyspnœa and cough, which have since been steadily increasing. For the two weeks immediately preceding entrance to



the hospital he was much worse, having palpitation, orthopnoea at times, and a small amount of urine. For the past three days slight swelling of the ankles. As I saw him sitting upright in bed, before I read the history, my guess was that his trouble was probably chiefly renal. You note his pallor, a certain amount of swelling of the face, and slight cyanosis. The swelling in the face was rather more pronounced than it is now. In the history slight swelling of the ankles is mentioned for a few days before entrance. There is now no swelling whatever. Œdema more marked in the face than in the extremities is rather more suggestive of renal than of cardiac trouble. We have a history, you will remember, of rheumatism six years ago. The dyspnoea, palpitation, and orthopnoea date from a fortnight after the fall. The chest was not bandaged for the alleged broken rib.

You will note the facies, the pallor, the swelling of the face, and the fact that he sits upright. The tongue is moist and clean. There is very marked and very extensive undulation all over the cardiac area. The motion reaches from the right of the ensiform cartilage beyond the left nipple line. You will notice that the impulse is more distinct in expiration. I can feel it in the sixth space and decidedly outside the mammillary line. On palpation there is a thrill, systolic in time. By percussion the area of cardiac dulness is much increased, especially transversely. It seems impossible that the heart should be as large as the percussion outlines indicate; but the other day I had a patient in the ward with an enormous heart, and I percussed out the area of cardiac dulness. The apex was seven inches to the left of the median line. The case terminated fatally, and I asked Dr. Bates to drive in needles along the line of that cardiac dulness. It was found that the area obtained by percussion was less rather than greater than it should be. That shows you that you can rely pretty closely on your percussion, provided it is done carefully.

Everywhere over the cardiac area, and over the front of the chest you may say, is a loud, rather harsh, systolic murmur, heard more and more distinctly towards the axilla. The aortic second sound is quite faint; the pulmonic second is somewhat accentuated. The action of the heart is regular, somewhat rapid. Percussion over the lungs in front is very fair. The respiratory murmur is pretty clear over the upper portion of the chest, but grows a little more feeble as you go down, and as you go backward you begin to get in both axillary regions râles. There is dulness over both lower backs, especially the right. The dulness begins about the lower angle of the scapula and soon merges into flatness at the base. The respiratory murmur is deficient, more feeble at the right base than it is at the left. There are a few râles at the right base. There is little vocal fremitus at the base, less at the right base than at the left. Percussion with the patient on the hands and knees does not indicate the presence of much fluid, there being no change in the level of dulness on change of position.

You notice a very marked fulness at the epigastrium. It is less distinct,

however, than when he came in. At that time the epigastrium bulged out. The abdomen is somewhat full, and there is some ascites present, though it is not very marked. The abdomen is much less resistant than it was a few days ago. It is more resistant on the right side than on the left. At the time of entrance the liver apparently extended down pretty nearly to the umbilicus. The edge could not be felt, but there was marked resistance, and also dulness on percussion. There was some ascites, and apparently a passive congestion of the liver.

The urine was highly colored, acid, sp. gr. 1022, with a trace of albumen. Sediment abundant, urates, a little abnormal blood, a few renal cells, some hyaline and fine granular casts,—nothing more than a passive congestion would account for. The urine now contains a very slight trace of albumen. The amount of urine passed the first twenty-four hours in the hospital was ten ounces, the next about twenty, and then a marked increase in the amount. The temperature at entrance was a little over  $99^{\circ}$ , coming down that evening to  $99^{\circ}$ , then to  $98^{\circ}$ , becoming subnormal, then rising again to the normal line. The pulse was 120 on entrance, then becoming slower, then more rapid, and now approaching the normal. The respiration was 36 at the time of entrance, and it is now about 20.

There is in this case a previous history of rheumatism, which was undoubtedly accompanied by an endocarditis, which endocarditis damaged the mitral valve. Compensation, however, was complete and perfect until after the fall from the tree. That fall from the tree is said to have broken a right rib. A fortnight later, symptoms of cardiac insufficiency began to come on, and have since progressively increased. He was up and about all the time in the house before coming to the hospital. He comes into the hospital with well-marked evidences of impaired compensation: venous stasis, manifested by œdema in the face, slight œdema at the ankles, moderate ascites, moderate hydrothorax, congestion of the liver with swelling, the scanty urine of passive congestion, and orthopnoea. For a couple of days before entrance there were vomiting and cough.

I wish to call your attention to these marks on the right side [leech-bites]. The cases of cardiac affection which I have shown you thus far have been cases chiefly in which the compensation was good, and I have had occasion to dwell upon the fact that you will do very wrong if you give digitalis every time you determine the existence of a valvular lesion. Here, however, we have a case in which the signs of cardiac insufficiency, of ruptured compensation, were very well marked and very unequivocal. What have we to do in such cases?

Perhaps it will be worth our while to consider for a moment what we mean by compensation. I can, perhaps, clarify the ideas of some of you on this important matter. Compensation cannot be defined in one word by any means. It practically consists in the re-establishment of a proper balance of the circulation. In the normal condition there is a certain definite relation between the amount of blood contained in the arteries



and the amount of blood contained in the veins. There must be a certain definite relation between the pressure in the venous and in the arterial circulation, so that the blood is passed round as rapidly as it should be. Suppose an impediment occurs in the circulation,—it does not make much difference at what point. Increased pressure behind it must result. Suppose the impediment is in the peripheral arteries, as in cases of high tension in Bright's disease, there is increased resistance for the left ventricle to overcome. It does not make any difference whether the resistance is at the aortic valves or at any other point beyond, the result is the same. The effects must necessarily fall first on the chamber which is immediately behind the seat of the obstruction. The blood being impeded in its flow, the tendency is for it to be dammed back on the left ventricle. To overcome that impediment the left ventricle must act with greater force. If the left ventricle possesses no reparative power, dilatation comes on. As soon as a certain amount of dilatation takes place, the mitral valve gives way, and then the pressure is thrown back on the right ventricle. If the dilatation still increases the tricuspid will also give way. The only way in which this sequence can be obviated is by hypertrophy. If hypertrophy occurs then resistance can be overcome wherever it may be seated; therefore hypertrophy is the most important factor in the establishment of compensation. Dilatation is generally combined with it in varying degrees, according to the nature and seat of the lesion. It is necessary in certain conditions that the two should be combined. For instance, contrast aortic regurgitation and aortic stenosis. In aortic regurgitation some of the blood which ought to be distributed in the systemic circulation falls back again into the left ventricle, and in order that the systemic circulation should receive sufficient blood we must have some dilatation. The left ventricle must contain more blood than ordinary, because all its contents are not propelled; on the other hand, in aortic stenosis, we have an impediment to the onflow of the blood; but if the ventricle can act with greater power and can force under greater pressure an equal amount of blood in nearly the same time, the systemic circulation is properly provided for, and we do not need dilatation, nor do we get it in the rare cases of pure aortic stenosis. Another factor comes into play in those cases of aortic regurgitation. The blood falls back into the ventricle at the time it is in diastole, when it is dilating. Heightened pressure, therefore, falls on that chamber at a time when it is weakest, consequently there is greater tendency to dilatation than in case of stenosis, when the heightened pressure comes during systole,—that is, when the ventricle is at its strongest. The pressure works at a disadvantage during systole, at advantage during diastole; so that in aortic regurgitation there is more dilatation than in stenosis.

Compensation is, then, the establishment of a new basis of the circulation. Now, in this case the lesion is a mitral one. As long as the patient's right ventricle was competent to send onward a sufficient supply of blood he got on very well. For some reason his right ventricle gave way; dila-

tation became predominant over hypertrophy. The cause for this is not clear. It is true he fell forty-one feet and six inches, but his symptoms of cardiac trouble did not come on until a fortnight after that. He may have injured something. I think it is extremely probable that he did, but it is not perfectly clear what happened in the case. It is unquestionable that the hypertrophy of the right ventricle, which up to that time had been sufficient, began to fail, and that dilatation got the upper hand; and then, although he kept tolerably quiet at home, the dilatation kept increasing, and he manifested more and more the evidences of over-accumulation of blood in the venous system, and deficiency of blood in the arterial system, and that is, speaking broadly, the universal tendency of ruptured compensation.

Now, there are several symptoms which this boy manifested to which I would like to call your special attention.

He had orthopnoea; he was cyanotic; his liver was markedly congested. He had dropsy more marked in the great serous cavities than in the subcutaneous cellular tissue. He was vomiting, the vomiting being largely an expression of passive congestion of the stomach, perhaps, also, of some mechanical interference with the stomach from the enlargement of the liver and from the ascites.

In the treatment of ruptured compensation we have to consider carefully the special features of the particular case in hand. We shall have other opportunities to see slight failure of compensation, such as is readily remedied by rest alone, or rest and cardiac tonics. In this particular case we have to consider the consequences of a pretty serious rupture of the compensation increasing in gravity, although he was in fairly favorable conditions.

Now, if you have an overburdened horse, you have three ways of getting him ahead. You can either reduce his work, or you can lay on the whip, or you can do both. There is one other thing you can do with a horse which you can't do with the heart. You can take the horse out of the shafts and give him absolute rest. The rest you can secure for the heart is only relative. In some cardiac cases taking off a little of the load is sufficient. In other cases you need to reduce the load and put on the whip,—by the whip I mean the digitalis group. There are other cases, and of those this is one, in which it is imperative to reduce the load, and that must be done at first; for there is no use in trying to whip until the load has been reduced. With the idea of purgation, this boy was given, when he first came in, some salts, which he promptly vomited. I don't think there would have been any use at that time in giving him digitalis. I don't think it would have been absorbed well, owing to the passive congestion of his stomach, and if it were absorbed it would have been likely to manifest toxic influence. The all-important thing in this case was to reduce the load. Now how are we to do that?

Rest, in the first place, to lessen the demands upon the heart just as far



as possible. He had had a good deal of rest before he came in, but he was not doing well on it alone.

Diet, in the second place, is of the utmost importance in the treatment of cardiac cases. In such a patient, whose stomach and intestines are in a condition of passive congestion, the digestion is much impaired, and he must have a very light diet. If you try to feed him too much, the food will be vomited. You must remember that food which is inside of the stomach is outside of the circulation. It is not what we put into the stomach, but what we assimilate, that counts.

Such a patient must be fed on the most easily-digestible foods, small quantities being given at frequent intervals; in other words, the diet must be suited to a very feeble digestion. Owing to the passive congestion present, the secretion of gastric juice and of pepsin is insufficient, and there is in consequence a tendency to fermentation; hence articles which are prone to ferment must be withheld. If fermentation occurs with the formation of gas, the result is distention of the stomach and pressure upon the diaphragm, which increases the embarrassment of the already overtaxed heart. You will find that gastric flatulence is a very frequent cause of suffering in cases of this kind.

It is desirable in many cases, of which this is one, more directly to reduce the load. One way of doing this is by free catharsis. Hydragogue cathartics will cause a drain of serum from the blood directly from the portal circulation into the intestine, and in that way the "liver is unloaded," and the venous circulation as well. If, however, the patient retains nothing upon the stomach, we must have recourse to other means. Fluid may be drawn off from the serous cavities, but it must be borne in mind that that serum is outside of the circulation, and that one is not directly unloading the venous circulation by withdrawing it. Very notable relief, however, may be obtained by tapping the pleural cavity or abdominal cavity, or by introducing needles into the legs and allowing a constant drain of serum to occur. In order to produce a prompt and marked effect, the circulation must be relieved directly. This may be accomplished in one of two ways,—either by venesection, the effects of which are immediate, or by the application of leeches, the effects of which are less immediate, but still oftentimes prompt. Venesection has gone so far out of use that physicians are unwilling to employ it unless the indications are very strong indeed, and many physicians fear that they will be blamed if they bleed a patient and the result is untoward. Such a fear, however, should not prevent us from doing what we conceive to be our duty. Oftentimes the withdrawal of a small quantity of blood has a most marked effect in relieving the right ventricle. In this case I did not think the symptoms were sufficiently urgent to demand venesection. I therefore ordered that he should have twelve leeches applied over the swollen liver, not with the idea that blood was to be abstracted from the liver itself, but simply as a convenient spot. After the leeches had fallen off the bites were poulticed so that more bleed-

ing might occur. This was done January 2, and you will notice the effect upon the quantity of urine secreted. He had been passing from ten to twenty ounces of urine per day for several days. The day after the leeches were applied he passed upward of sixty ounces of urine. You will also notice that the temperature, which had been subnormal, became normal, that the rate of the pulse fell to eighty, and the respirations to twenty-five per minute. Under this increased diuresis the dropsy of the pleura and of the abdomen diminished. The liver has diminished markedly in size, and he is less cyanotic. That improvement, however, was not altogether maintained, owing to the administration of too much digitalis. He was receiving ten minims every four hours, and began to manifest the toxic effects of the drug. His temperature began to fall, the pulse to increase in frequency, the respirations, however, remaining about the same. The amount of urine diminished, though he still passes upward of forty ounces. Yesterday, on seeing this state of affairs, the digitalis was omitted.

I wish to call your attention particularly to this method of relieving the circulation, which you will find in many cases to be of great use. Before deciding upon a method of treatment in such cases, it is of the greatest importance to ascertain under what conditions the patient has been up to the time when you first see him. Has he been favorably situated? If he has, in spite of favorable circumstances, been steadily growing worse, one is more disposed to adopt active and energetic treatment than if the patient has been in unfavorable circumstances up to the time when first seen. If he has been unfavorably situated, one is disposed to try more patiently the effect of rest, etc.

In this case I felt that under the circumstances digitalis would not be of any use; that it probably would not be absorbed; that the right ventricle was so over-distended that it would not properly respond; that the time for digitalis would come when relief had been afforded the venous circulation.

*Prognosis.*—The prognosis I do not regard as very favorable. I should characterize it as doubtful. How much we can do for him remains to be seen. He has been here only a few days, and a better estimate of the probabilities can be made in the course of another week. There has been no vomiting since the leeching, and he is distinctly more comfortable.



*CHOREA; CHOREA OF PREGNANCY; CHOREA AND MENTAL DISEASE; ADULT CHOREA; DUBIN'S CHOREA.*

CLINICAL LECTURE DELIVERED AT THE PHILADELPHIA HOSPITAL.

BY JAMES HENDRIE LLOYD, M.D.,

Physician to the Philadelphia Hospital, to the Methodist Episcopal Hospital, and to the Home for Crippled Children.

GENTLEMEN,—In the middle ages a peculiar epidemic religious excitement, analogous to modern revivals, was called St. Vitus's dance. This term has been applied erroneously to chorea, which is a distinct disease, in no way dependent upon religious or other emotional conditions except that sometimes a shock or fright may be its exciting cause. Chorea is a disease of the motor side of the nervous system, characterized by peculiar involuntary movements, associated with little, if any, sensory disturbance, and dependent upon an obscure pathology which has not yet been demonstrated. It is not infrequently accompanied by a true anæmia, and sometimes, in the graver cases, it presents severe, even fatal, brain complications, such as mania and delirium. In practice we are in the habit of dividing chorea into several groups, not that all these groups indicate different diseases, for some of them apparently are the same disease; but because they arise naturally in relation to the causation of the disease and the time of life in which it appears.

These groups can be stated, for convenience, as follows: (1) the essential chorea of childhood; (2) the chorea of pregnancy; (3) adult and hereditary chorea; (4) senile chorea. Finally, there are some aberrant forms, which are allied to true chorea, but probably depend upon a different morbid anatomy.

While in the main these four groups are identical in their clinical appearance, they differ in their causation, natural history, and prognosis, and very probably do not depend upon an identical pathology. In the absence, however, of exact knowledge of their pathology, we are forced to study and classify them from their clinical aspects,—that is, from their symptoms.

These various forms of chorea have one thing in common, the specific involuntary disorder of motion. As seen under all circumstances the disease is characterized by incoördinate, involuntary, clonic spasms of individual muscles, or more often physiological groups of muscles, sometimes general, but often more marked on one side. The fact that the muscles are affected in groups, just as in purposive acts, gives the movements sometimes the appearance of voluntary motions awkwardly performed. They are quite involuntary, however, and very little under control of the patient's will. In some patients a momentary control can be gained, and some pre-

cise actions performed, but in others an effort of will only makes the movements worse. They continue during waking hours, subsiding, as a rule, during sleep; in grave cases, however, they interfere very much with sleep. The range of the movements is wide and they have no rhythm; thus differing from fibrillary tremor and the tremor of paralysis agitans. The fact that they continue in the absence of volition distinguishes them from the intention tremor of disseminated sclerosis; although they differ also in character from that tremor, which is more rapid and jerky.

In the first place we will take up the essential chorea of childhood. This little girl, ten years of age, is an example of this. If I could have shown her to you a few weeks ago it would have been better, because now she is almost well.

Nellie H., white, aged ten years. About three months ago she was frightened by a colored man who ran after her when she was returning from school. Two days afterwards she began to have choreic movements. These choreic movements have been worse on the right side. There is no history of rheumatism. There is a slight murmur at the base of the heart, due to anæmia.

This chorea of childhood occurs usually between the fifth and fifteenth years of life. It begins in some few muscles, sometimes of the face. From these muscles it spreads; it depends on the severity of the individual case how far and how wide it may spread. It is sometimes more marked on one side than on the other. Sydenham, who first described the disease two hundred years ago, dwelt upon the fact that one side is frequently more affected than the other. In this little girl the right arm and hand were more severely involved than the left; but, as I said, she is so nearly well that the difference is hardly seen. Chorea of childhood is more common in girls than in boys. That is the teaching of statistics. Although, to show you how fallacious statistics are, a German authority says it is more common in boys than in girls. This is a matter of very little importance.

Chorea is not unfrequently associated with anæmia. What the association is I am not prepared to state dogmatically. Whether it is a coincidence or in the relation of cause and effect I do not say. I do know that most of the benefits obtained by treatment are obtained by attention to the condition of the blood. Hence, arsenic and iron are the best drugs.

This next case is quite typical.

John M., white, aged thirteen years, has a history of rheumatism when he was two years old,—but no authentic attack since. Three months ago he was struck in the face by his school-teacher, which caused him to “spit blood.” He was much frightened. In about one week he began to be very restless, and soon developed chorea. On admission to the hospital, about two months after the onset of the disease, he was still choreic and he was also anæmic. There is no heart murmur. The choreic movements are quite characteristic, but are no longer very violent. He is improving on Fowler’s solution.

Chorea furnishes some of the most interesting problems in pathology. Several theories are in vogue. Some years ago, Kirkes, an English writer,



observing, as all of us have observed, that in a certain proportion of cases of chorea there is a history of rheumatism, put forward the theory that rheumatism was the cause of chorea; and, in order to explain this relationship, stated that the rheumatism, setting up an endocarditis, caused granulations upon the valves of the heart; that these granulations were swept off into the blood-current, and in the form of very fine emboli were deposited in the capillaries of the brain. This theory has been supported by such men as Tuckwell and Hughlings Jackson. Now, the objections to this theory are two in number: that, in the first place, rheumatism is not present in the majority of cases, and, in the second place, the theory does not explain the disease. In the late investigation of the British Medical Association large numbers of cases were gathered from all over England, and it was found that only twenty-six per cent. of all cases of chorea had a history of true rheumatism, and even in some of these cases there were no endocardial changes. I think that the theory is far-fetched, and I do not put it forward here as an explanation of the disease. In my opinion, the disease is without known pathology. I do not believe that these endocardial changes are by any means constant, but I think that a certain proportion of them, as reported, are what we have in this little girl. She has no history whatever of rheumatism, but she has a slight murmur in the heart and in the blood-vessels of the neck, which I think is due to the fact that she is yet a little anæmic. I do not assert, however, that endocarditis is never present. On the contrary, it is found in a small proportion of cases. Another theory, hinted at rather than openly advocated, is that chorea, like tetanus, is an infectious disease; that it is dependent upon a specific germ. According to this theory there is no necessary connection between chorea and rheumatism. The joint and cardiac affections are not rheumatic, but are due to the specific germ of the disease, just as in scarlatina there is a specific scarlatinal joint and cardiac involvement.

Attempts to explain the disease from post-mortem findings have always been futile. Areas of meningitis, changes in the basal ganglia, involvement of the pyramidal tract, and degeneration of the cells of the anterior horns have been reported. Kahler and Pick have attempted to explain the relation of these various anatomical changes to the chorea by saying that such changes always have a close proximity to the pyramidal tract—that is, with the motor paths—and make their presence known by the choreic movements; but how this explains the disease is not stated. It is an explanation which does not explain.

With these theories our knowledge or speculation on the subject must stop for the present, because we have nothing else with which to explain it.

The treatment of this form of chorea is simple. The best treatment has reference to the condition of the blood. The best results are therefore obtained from arsenic and iron. The favorite method in this city is by the so-called ascending doses of Fowler's solution. The drug is given at the beginning in doses of two drops three times a day, and this is increased by

one drop daily until ten or twelve drops are given. If by that time the arsenic begins to cause irritation of the stomach it can be stopped immediately, or it can be given in the descending scale and then stopped for a day or two, and then again run up. Some years ago a German writer recommended hypodermic injections of Fowler's solution. At that time I had a very interesting case of the chorea of pregnancy, and treated the patient with large injections in the leg. Although antiseptic precautions were observed, the only results were large abscesses, and I have never tried that method since. There is no reason that the arsenic should be more efficacious in this way than by the stomach.

I have observed that most cases of chorea, whatever the treatment, pursue a course varying from eight to twelve weeks. I believe that this has been proved too by the statistics furnished by collective investigation. The patients grow worse for a while, then improve, and then the disease gradually disappears, as you see it is doing in this little girl, in whom it is visible in only a few muscle-groups.

It occasionally happens in the chorea both of childhood and of pregnancy that a very severe type of the disease develops. This causes such a disturbance of the nervous system that it is an imminently dangerous disease. The French call it "*folie musculaire*," or insanity of the muscles. It sometimes runs rapidly into mania, delirium, profound anæmia, and death.

The next form of chorea that I have to show you is to me the most interesting of them all; this is the chorea of pregnancy. This woman shows to you very plainly what the little girl did not,—the choreic movements. She has in a high grade the peculiar typical choreic movements; as she goes now, she goes all day, resting only during sleep. Now, for some reason chorea occurs in some cases of pregnancy. What relation the pregnancy has to the chorea, or the chorea to the pregnancy, it is extremely difficult to state. This relationship supplies one of the best arguments, in the first place, against the rheumatic origin universally of chorea. Certainly all cases are not of rheumatic origin. These cases of pregnancy, for instance, rarely have a rheumatic history. The disease is apt to occur especially in young primiparæ; that is not the case here, but is so in many cases. Probably young primiparæ have the disease more frequently than multiparæ. Another curious fact is that a larger proportion of cases than can be explained by mere coincidence have been observed in women who were illegitimately pregnant,—in unmarried women. For instance, Dr. Levick, of this city, some years ago reported the case of a girl in her teens who became illegitimately pregnant. When her condition was discovered she became much excited and in a few hours developed violent chorea. This chorea assumed rapidly a very grave form, and in a short time the girl died. That was a typical case of rapidly fatal chorea in a young primipara. What does such a case show? It shows that there is a mental element in some of these cases; something of shock or mental depression as a cause; something not accounted for by rheumatism or infection. Even this little girl has a history



of fright. She was alarmed, as we saw, by a colored man before the chorea began.

In some of these cases of young unmarried women especially this mental or moral element is observed. It is like the insanity of women who have just been confined. We know that an undue proportion of these cases occurs in young primiparæ. Now, of all forms of chorea the chorea of pregnancy is apt to be the worst. I have never in my life seen such violent, dangerous, and inveterate chorea as in pregnancy. It is not only a very severe type of the disease, but in some of the cases that I have seen it has shown a tendency to become chronic, and in one of them it induced mental disease. Some years ago I saw a young woman, about twenty, in her first pregnancy, suffering with chorea.<sup>1</sup> She said her husband was not living with her, but I very much doubted if she had a husband. This girl had such violent choreic movements that it was almost impossible to keep her on the bed, as she writhed from the top to the foot of the bed and from side to side. She developed in the fifth month of her pregnancy a great mammary abscess, which had to be opened and drained and which lasted for several weeks. She was in this way reduced to a condition of anæmia. I think in her case the origin of the inflammation of the mammary gland was traumatic. In all very severe forms of chorea, abrasions, bruises, and abscesses may occur. These complications, associated with the impoverished blood, may cause septic infection, which may prove fatal.

Our case is as follows :

Isabel J., white, married, aged forty-four years. About the middle of her fifth and last pregnancy she began to have chorea. This was five years ago,—therefore when she was about thirty-nine years of age. Her former pregnancies were free from any choreic movements; and she never had chorea when a child. Her labor was normal, but after the birth of her child the movements grew worse; and since then she has made no improvement. At present she is unable to lie quietly in bed, and her speech is affected. Her contortions are exaggerated when she is observed, and when she makes voluntary motions. She thinks her memory and mental power are failing. There is no history of rheumatism at any period of her life. It is a noteworthy fact that she has one child, eight years old, who has had chorea, but there is no history of any member of her family in the back generations having had it.

Very practical questions are involved in the prognosis both to the mother and the child. Some years ago an English obstetrician, Barnes, wrote a paper on all the cases of the chorea of pregnancy that he could find in medical literature. His statistics seem to prove that about seventeen out of fifty-six cases are fatal. I think that this is an over-estimate, for this reason. It has happened in the past that only the fatal or the severe cases have been reported. I have seen five cases of the chorea of pregnancy, none of which have been fatal. Milder cases are not apt to get

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<sup>1</sup> This case is reported in Hirst's "System of Obstetrics," where the subject is treated at length,—art., "Chorea of Pregnancy."

into print. I think that, while the chorea of pregnancy is a grave disease, it is not as grave as Barnes's statistics seem to prove. Another question comes up,—the prognosis in the case of the child. Statistics have also proved that some of these women go into premature labor, and that some of these children are still-born or die shortly after birth, probably because of the premature labor or because of the mother's reduced condition. A very practical question which you will have to face is, whether or not you shall bring on premature labor or even abortion. Many of these cases of chorea in pregnancy certainly recover after labor, but a small proportion do not, and on that account it is difficult to advise when premature labor should be induced. When the woman's life and the babe's life are in jeopardy it is justifiable, even imperative, to act. I think that after seven months, in some few cases, the chances for the babe's life may be better if taken from the mother. Recollect, however, that women do not all recover after confinement, and that the child sometimes does not live.

This woman has a rather unusual history for the chorea of pregnancy. In the first place, it was her fifth labor; in the second place, she had no history of chorea in childhood or in any of her former pregnancies. In some of these cases of the chorea of pregnancy it is found that the women have had chorea in early childhood. Others have had it in successive labors. I do not remember a case just like this, in which a woman approaching the climacteric exhibits the disease for the first time. This woman illustrates what I think would be found in all such late cases,—the disease has become chronic. Her baby was born about five and a half years ago, and her chorea began five months before the child was born. She grew worse after the baby was born. I believe that if she had been a younger woman she would have had a better chance of recovery. I can find no history of this disease in her family; it does not seem to be a case of the so-called hereditary chorea. She is a typical case of the chorea of pregnancy of middle life, becoming chronic.

I have now sent her out, to avoid saying in her presence that I think she has not a chance of improvement. I think there is some danger that her mental faculties will become impaired. The relation of the chorea of pregnancy to mental disorder is a most interesting question in pathology. This subject has been worked out clinically, more especially by the French, but we have little pathological or anatomical knowledge on the subject. In all severe, high grades of chorea there is some relationship to insanity. I am familiar with the details of another case which exhibited all the typical phases: illegitimacy, first pregnancy, chorea, profound anæmia, and insanity. The patient became insane, then hopelessly demented; and in her case premature labor did no good.

The forms of insanity most common in chorea are mania and delirium, running into chronic delusional states, and sometimes into dementia.

The next case illustrates in a different manner the relationship of pregnancy and chorea. It is not a typical case, because the woman was choreic



before she became pregnant ; but the pregnancy has already aggravated the chorea, and probably will make it still worse before term.

Mary G., white, unmarried, aged twenty-eight. She has a family history of rheumatism, but not of chorea. She herself never had rheumatism. When eighteen years old she developed chorea, after a very great fright. The disease became chronic, although in a modified form. Three months ago she became pregnant by a negro. One month ago the choreic movements increased in severity, until she was obliged to leave her work as a domestic servant, and she is now confined to bed in this hospital. The movements were formerly worse on the left side ; but now they are quite severe in all four limbs and in the muscles of the trunk, neck, and face. The heart is normal. The mental faculties are not involved. The woman has all the physical signs of early pregnancy.

The power of pregnancy to aggravate a pre-existent chorea is well shown in this case.

Now, in the next patient we have what is called adult chorea, in which there is no history of pregnancy.

Mary D., aged forty-seven, white, single. She always enjoyed good health, except that she was very nervous. She says that her mother had an affection similar to the one from which she, the patient, suffers. About three years ago she received a blow on the head from her father. This disease began then. She has, as you observe, choreic movements of the head, body, arms, and legs. These movements are quite typical, and in themselves could not be distinguished, I think, from those of the essential chorea of childhood. She has one peculiarity, however, which is in no sense choreic,—*i.e.*, she has torticollis. You observe the spastic contraction of the muscles of one side of her neck, pulling the head around. The pathology of torticollis is equally obscure with that of chorea. The association of the two, in a case following trauma, probably indicates some anatomical changes different from those of simple chorea. Our patient's mind is evidently weakened by her disease. Her case has been progressive and offers no encouragement.

There are some special features in adult chorea. In the first place, as my colleague, Dr. Sinkler, has shown, it is sometimes hereditary. Hereditary chorea was first described by a physician of this country named Huntington, and is sometimes called for him. He described the disease in a number of persons living in the eastern end of Long Island, where, for several generations, the members of a family had it. In this type of chorea the disease usually appears first after the age of thirty-five, in this respect differing from the essential chorea of childhood, and it is worse, and more inveterate. It is apt to be persistent and incurable. Then it is associated with mental impairment and affection of the speech.

This next patient is a case of senile chorea. She says she is fifty years of age, but she is evidently nearly eighty. She has all the marks of advanced senility. Her speech is very much affected and she is quite demented. The choreic movements, you observe, are very active in all the limbs. She has no memory and can give us no history of her case. She has very atheromatous arteries and a decrepit heart. These cases have been known to occur as late as the eightieth year of life. I think that they are not dependent

on the same pathology as the essential chorea of childhood, or of pregnancy, but in the absence of positive knowledge we find it convenient to group them under the generic term "chorea." The movements certainly are very similar to, if not identical with, those of the other forms.

It is the custom of some writers to divide chorea into the idiopathic and the symptomatic groups, including in the first those cases, like the chorea of childhood, that come on acutely and tend to recover; and in the second group, those cases that exhibit choreic movements as a result of organic disease or injury of the brain or cord. The distinction is important, but unsatisfactory. We know as a fact that after hemiplegia and sometimes after injury choreic movements, quite characteristic, begin. All these cases of adult, hereditary, and senile chorea, that I have shown you, belong probably to this second or symptomatic group. They probably depend on hereditarily defective development, on trauma, or on senile changes.

On the other hand, the chorea of pregnancy may be said to occupy an intermediate position between the essential chorea of childhood and the adult chorea. Some of these cases in pregnancy run an acute course and recover, just as in childhood. They have also sometimes a clear history of moral shock or fright. But, again, some of them tend to become chronic, as in our first case here to-day. She presents many of the features of adult chorea. Other cases degenerate into chronic insanity, as in another case that I saw several years ago.

An Italian physician, Dubini, has described a form of chorea which he calls electrical chorea, because its peculiarity is a succession of motor shocks such as are received when an interrupted current of electricity is passed through the body. This next case has always been of great interest to me. Opinions differ about it; some say that it is simply aggravated chorea. The patient has, as you see, a succession of these electric-like shocks. His disease is similar to that described by Dubini. We do not have many of these cases in this country, and I think that they are perhaps only an exaggerated form of chorea. There is an element, too, of possible heredity. This patient says that he had a brother similarly affected.

Charles E., aged about twenty-five years, colored. He has been confined entirely to bed for a number of years, because of motor weakness, and of the violent incoördinate movements. These movements affect the face, speech, neck, trunk, arms, and legs,—in fact, the whole voluntary system. They are not unlike the muscular reactions caused by successive shocks of electricity. The left arm is peculiarly affected; when the general commotion is violent this arm is held stiffly upright. The movements are constant, but vary in degree. Violent exacerbations come on. During these the patient is jerked violently by successive shocks, rapidly repeated. The sweat pours from his body. He is speechless, and in great distress. The muscles are hard and developed like those of an athlete. The disease shows no tendency to improve.

Now, one word as to diagnosis. As I have told you, chorea is a disease in which the pathology is as yet unknown, except in the symptomatic



group depending on organic lesion, and even there the exact mode of production is not apparent. The next case is this little child who has not true chorea, but choreiform movements; there is a difference. She has choreiform movements dependent upon congenital and organic disease of the brain. I think that there is a breaking down of the motor region of her brain. She is probably a case of birth-palsy,—i.e., paralysis due to injury before or about the time of birth. She is paralyzed, and defective in mind.

Some years ago a form of motor disorder following hemiplegia was described by Hammond. He called this disorder athetosis. It is decidedly different from chorea. The athetoid movement is dependent on more or less spasticity or stiffness of the muscles. They may become hypertrophied. This child presents an example of this athetosis, associated with paralysis and idiocy. Observe it well. It is different in its form and causation from chorea. It is important for you to distinguish it from chorea, because the one depends upon a hopeless organic defect, while the other is a disease of hopeful prognosis, as a rule, in children.

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## *MALIGNANT TUMOR OF TONSIL AND PHARYNX; EPI- THELIOMA OF THE CHEEK.*

CLINICAL LECTURE DELIVERED AT THE NEW YORK CANCER HOSPITAL.

BY B. FARQUHAR CURTIS, M.D.,

Surgeon to St. Luke's Hospital and to the New York Cancer Hospital.

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GENTLEMEN,—There are various methods of attacking tumors of the tonsil and its neighborhood when the operation through the mouth is unsatisfactory or impossible, as it usually is. Langenbeck made an incision from the angle of the mouth downward and backward, and divided the lower jaw, thus exposing the field of operation by turning the ramus and soft parts outward, and finally wiring the bone together. Küster advocated removing the ramus entirely, on account of the danger of ankylosis from subsequent contraction of the cicatrix in the mouth. Complete or osteoplastic resection of the upper jaw has also frequently been employed to gain access to the pharynx. All of these methods are far more complicated and disfiguring than that suggested by Mikulicz, which reaches the parts by an incision from the mastoid process to the greater cornu of the hyoid bone, followed by subperiosteal resection of the ramus of the inferior maxilla. This is the operation which I propose to perform upon the patient before you, provided that the tumor does not prove too extensive for removal. It is often impossible to determine the limits of such a tumor as this until the bone has been resected, on account of the obstruction

caused by the neoplasm itself. But I shall alter Mikulicz's incision somewhat, as an experience in two other cases has shown me that better access can be had to the pharynx through a T-shaped incision situated a trifle higher up.

The patient is fifty-three years of age, and gives a family history of cancer, two aunts having died of this disease. She is married, and has had six children, and up to six months ago was in good health. For the past six months she has suffered from what was at first supposed to be tonsillitis, and no special attention was paid to it for about three months. She has been under regular medical treatment for the past six weeks, and on account of the presence of the tumor in the throat, she has been referred to this hospital. We find that the tumor is about the size of a pigeon's egg, and occupies the region of the tonsil, causing a bulging of the soft palate into the mouth. The uvula is also carried far to the left, and the base of the tongue is depressed. With the exception of one small spot of ulceration the mucous membrane is unaltered. There has not been enough pain at any time to require the administration of morphine.

The patient has been etherized and a preliminary tracheotomy has been performed,—for two reasons, first, because of the obstruction to respiration caused by the tumor; second, to enable me to pack the pharynx in case of any severe hemorrhage later. Although the patient's mouth cannot even now be opened very widely, I feel an extensive tumor, which apparently involves the tonsil and the side of the pharynx from the vault to the base of the tongue. I can find no glands in the neck. I now make an incision from the tip of the mastoid process to just below and in front of the angle of the jaw, exposing the edge of the sterno-mastoid muscle. The anterior part of the incision is deepened to the bone at the angle of the jaw, and the periosteum raised from the ramus, this being done carefully so as not to penetrate into the mouth in front, and the ramus is sawed across obliquely just above the angle, and removed by twisting it out after the tendon of the temporal muscle has been divided with curved scissors. The bone is divided at this point to preserve the insertions of the masseter and pterygoid muscles as far as possible, in order to avoid lateral displacement of the jaw after healing. Ankylosis is so liable to follow operations of this kind that it is better to remove the ramus entirely than to return it to its place and suture it. The subsequent displacement is not very great, and in my last case it was only the space of one tooth.

Another incision is then made downward for about two inches, along the edge of the sterno-mastoid, joining the other in its middle, and the styloid process is exposed. The dissection is then carried on carefully and as far as possible with the fingers. As you see, there is very little bleeding, and this is in part due to the tracheotomy, which has relieved much of the turgescence commonly found in patients with obstruction in the throat. I have now reached the wall of the pharynx. This method of reaching the pharynx takes advantage of the fact that the great vessels and accompanying nerves lie along the course of the sterno-mastoid, the glosso-pharyngeal and hypoglossal, curving forward just below our wound, while the im-



portant nerves of the face issue from the skull very much anterior to this, thus leaving a space quite free from all important structures except the internal maxillary artery, which is easily ligated if in the way. It is this space which forms the field of our operation.

With the index-finger of one hand in the wound and that of the other in the mouth I can now easily reach the limits of the tumor, and, unfortunately, I find that behind the part already described lies another mass divided from the first by a deep sulcus and involving the posterior wall of the pharynx quite to the vault. Although I have successfully removed by this method the bony roof of the pharynx, opening the sphenoidal sinuses, and could remove this mass also, there would undoubtedly be some portions left behind. If we stop where we are we have merely a wound in the neck not communicating with the mouth, so that the risk is small, whereas if we attempt the removal of the growth we expose the patient to all the risks of a large wound communicating with the mouth, and in this case there is no chance of a radical cure, so that it does not seem worth while to incur that risk. I shall therefore close the wound as it is. This is, by the way, one of the great advantages of the method used, that the operation can be abandoned without opening the pharynx, or it can be divided into two acts at this point. In a previous case I found it wise to stop at this point because the patient bore the ether very badly and the hemorrhage had been very severe, so I packed the wound, and eight days later easily completed the operation. The removal of the ramus is of itself an advantage to this patient, as it will give her so much more room for breathing and swallowing, by allowing the tumor to bulge outward.

The wound was dressed with sterilized gauze, and the tracheotomy wound with iodoform gauze.

Our next patient is a woman, sixty-four years of age, who has had five children. In June, 1891, she first noticed a lump on the skin of the temple, and after using a "salve," an ulcer formed, and has existed up to the present time. It has given her considerable pain. This ulcer is quadrangular in form, measuring two inches on each side, situated between the eye and the ear, over the zygoma. It is adherent to the malar bone, and extends to within half an inch of the external commissure of the lids. After scrubbing the face with soap and water, an incision is made through the skin half an inch beyond the border of the growth, circumscribing it. I find that the anterior half of the zygoma has been destroyed by the neoplasm together with the zygomatic process of the malar bone. The removal of the diseased part of the malar bone opens the antrum. This opening is closed by drawing the skin over it. After thorough cleansing of the skin of the patient's thigh a number of long and thin grafts of skin are removed with a razor according to the method of Thiersch. Bleeding points are all secured before attempting to apply the grafts. The surface to be grafted is then thoroughly washed with very hot water to check all bleeding, and after the application of the grafts the wound is dressed with

rubber tissue, and compresses wet with salt solution. In this situation we are exposed to a double danger of infection and consequent failure of the grafts, first from the eye, second from the open antrum, and yet it is worth while to make the attempt, for even if only part of the grafts take we shall have shortened by so much the duration of healing.

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## *THE MANAGEMENT OF ECZEMA IN INFANTS AND YOUNG CHILDREN.*

CLINICAL LECTURE DELIVERED AT THE PHILADELPHIA POLYCLINIC.

BY ARTHUR VAN HARLINGEN, M.D.,

Professor of Dermatology in the Philadelphia Polyclinic.

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GENTLEMEN,—The subject of eczema in infants and its treatment is one upon which I have had occasion to write and speak many times in the course of twenty years of the practice and teaching of dermatology, and I sometimes think that the theme is a little worn. But I have still reason to believe that all practitioners are not as fully able to cope with these cases as they would like to be; and besides this, new students and young practitioners are constantly coming forward, who require to be instructed upon some of these special points which are not much dwelt upon in the course of medical training in our colleges. And yet among the first cases the young practitioner encounters are those of the various diseases and ailments of childhood.

Eczema cannot be named among the more serious diseases, but still you may meet cases at any time which will try your patience and baffle your therapeutic skill, and which, by the amount of suffering and sleeplessness caused the little patient and the worry and loss of rest to the parents and attendants, will sometimes rise to the proportions of a domestic calamity.

The infantile skin being peculiarly susceptible to external injury and irritation, it is not uncommon to see the milder forms of eczema spring up suddenly as a result of too much soap and water, of wet diapers, of slobbering about the neck, or merely from the rubbing and chafing of irritating clothing or exposure to the rigor of winter air in taking exercise.

The erythematous form of eczema here understood is characterized by a simple redness of the skin without infiltration, moisture, or discharge of any kind. It is not apt to be mistaken for any other disease, unless under exceptional circumstances, which I will mention in a few moments.

It is very easy for this condition, occurring in the tender skin of infancy, to run into another and more serious form of eczema, accompanied by exudation and maceration of the cuticle, or the formation of vesicles, and for



this reason it should be checked at once. As it is almost invariably due to local irritation, the cause of this must be looked for and so far as possible done away with.

One of the commonest forms of erythematous eczema in infants is that often called intertrigo, and which is here due to the maceration of the buttocks, groins, and thighs in the urinary and fecal discharges retained in the child's napkin or diaper. When these discharges are normal they are rarely irritating, but an attack of indigestion or diarrhoea gives them an irritative character, and if the condition remains unchanged intertrigo and erythema supervene, and the condition soon goes on to the stage of moist eczema, usually beginning in the groins.

The appearance, which is at first only that of a more or less dusky redness of the skin, soon changes, and fissures occur in the folds of the groins and about the genitals and anus, the perspiratory secretion becomes rancid, and adds to the irritation and extreme discomfort, due to burning and itching, and pain on movement results.

In these cases the first thing to be done is to change the character of the alvine and urinary discharges. The fæces are apt to be white and curdy and very sour-smelling. Give minute doses of calomel and soda, sometimes adding a little rhubarb, and correct any possible errors in the infant's dietary, and you will soon find a change, not only in the character of the stools but also in the urine. The latter, which is frequently somewhat scanty, highly colored, and acid, with occasionally some deposit of urates, becomes changed by the rectification of the intestinal disturbance.

Meantime you must protect the tender skin from the irritating fluids in which it is constantly bathed. Ointments and greasy applications will not usually suit, because they quickly become irritative. A careful cleansing of the skin with some mild soap and warm water, followed by careful drying with a soft towel and a coat of vaseline, is very effective in giving relief.

The proper soap for use in these cases is one as nearly neutral as possible. Almost all soaps used in washing infants are too alkaline. Even the finest Castile soap is not satisfactory. I have lately employed a German soap invented by Dr. Unna, of Hamburg. It is called "*Basis seife*," and is carefully made so as to be as nearly neutral as compatible with the formation of suds in warm water. It is called "superfatted," but I think that is a misnomer.

If the eczematous condition requires local medication, a very mild astringent lotion acts better than other forms of treatment in most cases. The black wash of the Pharmacopœia, alone or with an equal quantity of lime-water sopped on the skin or applied on soft rags in the folds of the skin from time to time, often acts surprisingly well. Powders are so apt to cake and crust that they must be employed with caution, and those containing starch should be avoided. Very finely-powdered talc, Fuller's earth, or, in some cases, the subnitrate of bismuth are among the best.

When there are cracks and fissures, ointments may sometimes be used.

The black wash, followed by an ointment of oxide of zinc and vaseline in equal parts, may be applied in small quantity. Now and then an ointment of subnitrate of bismuth, half a drachm to the ounce of vaseline, may be employed.

The same principle applies in the treatment of erythematous eczema about the neck, etc., only that no internal treatment of any kind is required in these cases.

I have said that the diagnosis of erythematous eczema in infants presents no difficulty. The only exception to this is met with occasionally in certain cases of eczema about the buttocks. Here, when there is a tendency to infiltration resembling rather papular erythema than eczema, a case will occasionally be encountered which resembles one of the erythematous forms of infantile syphilis.

The syphilitic eruption, however, is almost always accompanied by moist papules about the anus, and you will also be apt to find some other sign of syphilitic infection, notably that nasal catarrh commonly called "the snuffles." In suspicious cases a very close examination should be made to exclude the much more serious constitutional disease.

Erythematous eczema is a disease of earlier infancy. After the first six months of extra-uterine life the commonest forms are eczema vesiculosum and eczema rubrum.

A little before the advent of the first teeth, children sometimes begin to show a slight redness in the cheeks, with the formation of incomplete vesicles. Often this does not extend beyond a small patch, which may come and go in sympathy with stomachal or buccal irritation. At other times the disease spreads rapidly, the cheeks and forehead become covered with a bright-red, dry, or moist eruption, with a greater or less amount of exudation and crusting.

If the infant is badly nourished, or sometimes even when the general health is not perceptibly impaired, this eruption may spread and cover the whole head, and patches may appear elsewhere on the body and on the limbs. These cases are usually accompanied by much itching and irritation; the child weeps, struggles, and attempts to scratch and rub the irritated skin with fury. It seems to sleep little and cries constantly, depriving its attendants of rest and demanding all the skill and solicitude of the physician to give relief. I need not dwell upon the picture, as it is, unfortunately, not an uncommon one.

In most of these cases the infant has had more or less digestive trouble. The cases I meet most commonly occur in children who have been brought up by artificial feeding. Your first efforts thus far are to be directed towards allaying any irritation which may be present in the alimentary canal. This is often no easy task. I cannot at present, however, go into this branch of treatment, which also you must naturally be prepared to advise according to the circumstances of each case.

I will say, however, that when no particular indication for treatment



presents itself, the administration of minute and frequently-repeated doses of calomel is often of the greatest service. The course should last for twenty-four or thirty-six hours, and should be repeated every five or seven days, or at the beginning of each recurrence.

When the eczema occurs a little later, about the end of the first year, the teeth are almost always at fault. A fresh recurrence of the eczema may be looked for just before the eruption of each tooth. The moment the teeth appear through the gum, the eczema tends to subside. You may aid nature by incisions over the pressing tooth, often with very great advantage.

In severe cases it is certainly better to put the patient under some form of restraint. It seems cruel to prevent the little sufferer gaining any relief by rubbing and scratching. No one who has experienced the agony of severe itching would desire to restrain himself from the relief of scratching, temporary though such relief must be, and almost always followed by an increase in the inflammatory symptoms.

But in the case of infants such restraint should always be accompanied by thorough and careful application of remedies calculated not only to relieve the inflammatory symptoms, but also to assuage the pruritus.

It is the custom to use ointments of oxide of zinc, but these are so adherent that, on the scalp at least, they are inconvenient. Ointments of some sort, however, are suitable for this form of eczema, and it is generally best to use vaseline as a base, although adeps may be substituted. Lanolin is so tenacious that it should not be used, except in combination with vaseline. One part of lanolin to four of vaseline makes a convenient excipient for whatever medication may be employed.

In those somewhat unusual cases where there seems to be little or no pruritus, an ointment of boric acid (twenty or thirty grains to the ounce) may be prescribed. In other cases a drachm of subnitrate of bismuth to the ounce of ointment is of use. These ointments are best applied spread on linen rags or on strips of paraffin paper. They should be cleaned off from time to time by the use of warm water and the "basis seife," mentioned above, because decomposition and irritation soon occur under such dressings.

In practice you will find it extremely difficult to have the head and face kept covered with dressings of any kind. The constant movements of the infant render it next to impossible to keep bandages in place. I should advise you, when possible, to make such applications and dressings with your own hands. In this way a great deal will be learned about the necessary manipulations, and your early struggles will render you more charitable towards the attendant when you find that your carefully-given directions have not been complied with, and that, on a second visit, a few scattered smears of ointment amid the raw and crusted area of diseased skin are the only evidence of any applications having been made.

Curiously enough, one difficulty in making local applications in these cases comes from the reluctance of parents and attendants to "disfigure"

their children by the application of bandages. It is a point of view I have never been able to take, that of regarding a swollen, red, crusted, weeping face and head, scarcely recognizable as human, in the light of a more agreeable object than the same parts covered with healing and beneficent applications.

Where there is pruritus, you would do well to have the various ointments employed rubbed gently into the skin in small quantities and at frequent intervals. The addition of from three to ten grains of carbolic acid to the ounce of the ointments mentioned above will soothe the itching in most cases. Tar or oil of cade, in the proportion of a drachm to the ounce of ointment, is an excellent antipruritic; it is much more disfiguring than the carbolic acid, however.

An excellent preparation in this form of eczema is the following:

R Sulphuri precipitat.,  
Picis liquidæ, āā ʒss;  
Ung. zinci oxidi, ʒi.—M.

Keeping in mind what I have said about the clinging properties of oxide of zinc ointment, you will not use this when there is much hair, but I know of no more generally useful ointment in these cases.

When the pruritic eczema is in the form of small patches, especially on the cheeks, and when the discharge is not very profuse, the following pigment is convenient:

Olei cadini, ʒi.  
Collodii, fʒi.—M.

A camel's-hair brush should be fastened to the cork so as to be withdrawn with it, and the attendant must be instructed to keep the bottle closed.

A coating of this pigment brushed over the diseased skin acts as an antipruritic, and also protects the diseased patch from the air and, to some extent, from the hands of the little patient. When the disease is on the cheeks it is usually the most convenient application which can be made. The pigment stings slightly when first applied, but this discomfort passes away almost immediately. The child should be held firmly to prevent struggling during the laying on of the pigment, and care should be taken to avoid getting too near the eyes.

You may think I have gone into these points with a good deal of unnecessary detail, but I can assure you that in this, as in so many other points of practice, strict and careful attention to details will alone give satisfactory results.

Older children often suffer from eczema, which may or may not have begun in infancy, and these cases, when chronic, are often very intractable, lasting all through childhood and even early youth, and sometimes hardly passing away at maturity. Scrofulous and ill-nourished children are very apt to suffer from vesicular and pustular eczema combined, or from the pustular form alone. In these cases tonics and nutrients are called for.



Iron, cod-liver oil, extract of malt, and quinine may be employed from time to time.

Arsenic is a drug so commonly employed, even at this day, in the treatment of eczema of all kinds that you will naturally expect me to say something about it; but I must distinctly state, as the result of a very extensive experience in the use of this drug, that, in my opinion, it has no specific effect whatever upon the course of eczema, and that even as a tonic its use is limited. In children, disturbance of the digestion is frequently the most marked result of its administration, and through this the disease may be, and sometimes is, rendered worse.

There is a form of this protracted chronic eczema in children which occurs in those having an unnaturally dry skin, in fact a tendency to the condition known as ichthyosis. Here you will be continually baffled in your efforts, even to subdue the eczematous symptoms, to say nothing of permanently curing the disease.

The local treatment, which in ordinary cases is based upon the same course described under the head of infantile eczema, must be supplemented in some cases, especially when the disease is extensive, and always when a general dry ichthyotic condition of the skin coexists, by the frequent employment of baths.

These should be warm, and should be medicated by the addition of a quarter of a pound of ordinary washing soda and a pint of clear starch to thirty gallons of water. For a young child's bath, half of each of these proportions should be employed. The patient should remain in the bath some time, and when taken out, should be dried without rubbing, and the appropriate applications made, when the patient should be put to bed to avoid catching cold.

In some of the more chronic cases of eczema in children, when a few circumscribed, thickened, itchy patches extremely resistant to treatment represent the disease, it may sometimes be necessary to have recourse to strongly stimulant applications, with a view to excite enough reaction to carry off the infiltration. Tar in ointments of various strengths may be employed alone or combined with a mercurial ointment, as in the eczema of adults. Washes of potassa caustica, from five to twenty grains to the ounce, may be applied by means of a small swab brushed over the surface. These applications should not be allowed to remain, but should be quickly washed off and followed by a soothing ointment. They should be applied cautiously at first, remembering the more delicate character of the child's skin.

Such are the principles of the management of eczema in infants and children, and with these suggestions you will be able to give relief in all cases and to cure a large majority.

*DIABETES MELLITUS.*

CLINICAL LECTURE DELIVERED AT THE WOMAN'S HOSPITAL OF PHILADELPHIA.

BY FREDERICK P. HENRY, M.D.,

Professor of the Principles and Practice of Medicine at the Woman's Medical College of Pennsylvania.

THE patient before you is a widow, forty-nine years of age, who complains of headache, a constant feeling of lassitude, a poor appetite, and insomnia, notwithstanding the fact that she is habitually drowsy. In addition, she is troubled with pruritus vulvæ and with itching of the general cutaneous surface, and has been steadily losing flesh. A very significant fact in connection with these symptoms is that the urine is decidedly increased in quantity, the diurnal secretion of this fluid averaging about one hundred ounces.

With such an array of symptoms, the diagnosis of diabetes mellitus seems to be fully warranted, but no one is justified in making such a diagnosis without a chemical examination of the urine. In passing, I may call your attention to the words "*mellitus*" and "*insipidus*," which are unpleasantly suggestive of the days when the sense of taste was employed in the diagnosis of diabetes.

The urine of this woman has been repeatedly examined by the resident physician, and at no time has it been found to contain either sugar or albumen. The last examination was made by myself a few minutes ago, and with the usual negative result. The specific gravity is scarcely low enough to warrant a diagnosis of diabetes insipidus. The urinometer registers 1017, and on a previous occasion the density of the urine was 1020. Its reaction is neutral.

I must confess that the result of the examination of this specimen of urine is disappointing and baffling. It certainly seems as if the case ought to be one of diabetes mellitus, and I am inclined to believe that it will yet prove to be of that nature. If there is such a thing as a preglycosuric stage of diabetes mellitus, one would naturally expect it to manifest itself by just such symptoms as are presented by this patient. For the present we must rest satisfied with a diagnosis of polyuria, and it is a well-attested fact that in many cases of the sort there is a gradual transition to diabetes mellitus.

I had expected to be able to show you this morning an undoubted case of the disease just mentioned, but the patient, a young man in one of my wards at the Philadelphia Hospital, was too weak to make the long trip from that institution to this. I can only show you at present a specimen of his urine, and this fact is comparatively immaterial, as many of you have



already seen the case. I first examine the urine for albumen with Heller's test, and, as you can all perceive, there is a thick ring of albumen at the junction of the urine with the nitric acid. Now, a physician who was careless in his methods might stop here and regard the case as one of Bright's disease; but we will proceed a step further, and test the specimen for sugar. For this purpose I make use of Fehling's solution, and the copious yellowish-red or brick-dust precipitate, which immediately forms, shows that sugar is abundantly present. The association of albuminuria and glycosuria is not at all rare, and it throws some light upon the pathogenesis of Bright's disease in general. It shows that the excretion of irritating materials will give rise to nephritis.

In works on urinalysis it is stated that the presence of albumen in urine interferes with the tests for sugar, but in the specimen before us this is certainly untrue. I have never seen a more complete response to Fehling's test than in this instance.

The principal cause of this saccharine condition of the urine is undoubtedly the abuse of farinaceous and saccharine articles of food. This statement is borne out by a study of the facts relating to its endemic prevalence. For example, diabetes is more common in Scotland than in England, and in the former country the diet is largely farinaceous. On the other hand, the English suffer more from gout, owing to their greater consumption of albuminoids. In Genoa a large amount of meat is consumed, while in Naples the diet of the people is almost exclusively farinaceous. In the former city, diabetes is so rare that it is difficult to obtain a case for clinical purposes, while in Naples it is said not to be uncommon for a physician in large practice to have as many as twenty cases under his care at one time.

Diabetes begins with non-combustion of a portion of the ingested carbohydrates. Gradually less and less sugar is consumed until there arrives a stage when the amount of sugar excreted with the urine corresponds exactly with that ingested. It is, therefore, says Cantani,<sup>1</sup> no real privation to eliminate carbo-hydrates from the diet of the diabetic patient in this advanced stage of the disease, because these substances serve no nutritive purpose whatever. They pass out of the system unchanged or nearly so, precisely as so much poison. In fact, under such circumstances, they are neither more nor less than poisons.

I have quoted Cantani, of Naples, whose experience is based upon the study of more than a thousand cases of this disease. This authority believes all medication to be useless in diabetes mellitus, except that which consists in the administration of alkalies, and especially of the alkaline lactates. These compounds are readily consumed by the diabetic organism, and in this way supply to a certain extent the place of the carbo-hydrates which escape combustion; and it is owing to the coincident administration

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<sup>1</sup> *Lavori dei Congressi di Medicina Interna*, 1888.

of alkalies that success is sometimes attained by dietetic methods less rigorous than those advised by Cantani and others.

Another great authority upon diabetes is Ebstein, and it is an interesting fact, although one by no means unparalleled in medical annals, that he and Cantani are thoroughly agreed as to the treatment of diabetes, but differ radically as to its mode of origin. Ebstein, having observed that the presence of carbonic acid retards the conversion of glycogen into sugar outside of the body, made use of this fact to frame a theory as to the origin of diabetes. This view is that in diabetes the protoplasm of the body is altered in such a manner that from a given amount of carbon-containing substances it produces less than the normal amount of carbonic acid, and that, in consequence, there is an inordinate conversion of glycogen into sugar, the action of the diastatic ferment not being restrained in diabetes, as in health, by the presence of a certain amount of carbonic acid. On the other hand, Cantani admits that in diabetes there is a deficient production of carbonic acid by the tissues, but regards this as a consequence, not a cause, of the disease. He calls attention to the fact that the theory of Ebstein does not explain the disappearance of sugar from the urine in cases of diabetes just before death, without unwarrantably assuming that an unusual amount of carbonic acid is produced at that time, or that the diastatic ferment is entirely wanting. The difference between the views of these two authorities is traceable to their different ideas concerning the assimilation of carbo-hydrates in health. Ebstein agrees with most physiologists in thinking that the ingested carbo-hydrates are converted into glycogen and stored up in the organs and tissues of the body, more especially the liver and muscles. Cantani, on the contrary, believes that they are directly consumed, and, in support of this view he argues that the time is too short for the appearance of sugar in the urine if the carbo-hydrates have to be first converted into glycogen and then into sugar. For example, if, in a case of diabetes, the sugar is caused to disappear from the urine by strict dieting or absolute fasting, it can be made to reappear in that fluid, in the course of two or three hours, by feeding the patient with starch or sugar. Again, in late stages of diabetes the exact amount of sugar that is administered to the patient may be recovered in the urine, grain for grain, and it is highly improbable that this would be the case if it had first to be converted into glycogen. Surely, a fraction of it would be retained in the system under the form of glycogen.

There can be no doubt whatever that diabetes mellitus is a disease of diverse origin. It has been observed in association with disease of the pancreas and may be produced experimentally by removing that organ. Total extirpation of the pancreas is invariably followed by diabetes mellitus, the animals experimented upon developing also polyphagia and polydipsia and becoming rapidly emaciated: in a word, their symptoms are identical with those of genuine diabetes mellitus in man. In order to produce diabetes experimentally, the entire pancreas must be extirpated. If a por-



tion is left, amounting only to one-tenth of the gland, it suffices to carry on its function, so far as the suppression of diabetes is concerned. There has been much discussion as to the mode in which diabetes is produced by ablation of the pancreas, and the weight of opinion seems to be in favor of the view that the pancreas elaborates a ferment which is glycolytic,—*i.e.*, destructive to glucose. This ferment does not pass into the intestine with the pancreatic juice, for diabetes cannot be produced by ligaturing the pancreatic duct. It is formed in the gland and absorbed by the blood-vessels and lymphatics.<sup>1</sup> Injuries and diseases of the nervous system are recognized causes of glycosuria, and in this connection I may refer to a case observed by Osler, in which there was found post mortem a cysticercus in the fourth ventricle.

In the case which serves as the text of these remarks, I have been unable to trace the affection to disease of the pancreas or of the nervous system or to inordinate consumption of starchy and saccharine food. There is no doubt that hereditary predisposition is of etiological influence in the production of diabetes mellitus, but it is very exceptional for a hospital patient to be able to give a reliable account of the *morbidity* of his family.

When diabetes mellitus pursues a fatal course, it takes one of two directions: the patient gradually succumbs to exhaustion, the fatal event, in such cases, being almost invariably preceded by pulmonary phthisis; or death occurs suddenly in a state of profound unconsciousness, known as diabetic coma. In the patient to whose case I allude it seems probable that death will occur by asthenia, for muscular weakness is steadily progressing, and there are signs of consolidation of the apex of the right lung. In my own experience the termination by coma is as common as that by asthenia. Out of five fatal cases recently under my observation, three died from diabetic coma and two from asthenia.

Diabetic coma may occur without premonition, or it may be apparently due to some exciting cause, such as violent emotion, unusual bodily fatigue, or digestive disturbances.

There are certain peculiarities distinguishing this form of coma from all other states of unconsciousness. One of the most striking, and at the same time one of the most frequently present, among them is the peculiar odor exhaled by the patient, an odor compared by all clinicians who have noticed it to that of chloroform. It precedes the state of coma, and may be regarded as one of its premonitory symptoms, as in a case related by Lecorché, a well-known French writer on diabetes. Observing this odor in a patient who came to his office complaining of vertigo and general malaise, he examined the urine at once, detected sugar in it, and advised the man to go home, promising to visit him the same day. By night the patient had died in a state of coma. This odor is probably often over-

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<sup>1</sup> Nommes, Étude sur le pancréas et sur le diabète pancréatique, Thèse de Paris, 1891.

looked or rather unperceived when present. In fact, if one may judge from a statement of Fagge, it is probably invariably present and readily detected by those whose sense of smell is acute. The statement to which I refer is that the late Dr. Babington, when he examined patients for admission to Guy's Hospital on Wednesday mornings, could detect by this peculiar odor a case of diabetes among them.

The odor in question is that of a substance called acetone, and the state of diabetic coma is attributed to an accumulation of acetone in the blood, and is, therefore, known as acetonæmia. There can be no doubt that the odor emanating from cases of diabetic coma is similar to, if not identical with, that of acetone, but it is denied by some authorities that this substance is the cause of the symptoms in question, which have been attributed to oxybutyric and other fatty acids.

Besides the odor just described, diabetic coma is often characterized by intense dyspnœa, unaccompanied by any sign of pulmonary disease. This peculiar form of dyspnœa is observed only in the early stages of the coma, before it has become profound, and may precede its onset. It is a purely nervous manifestation caused by the toxic action of acetone (?) upon the respiratory centre.

Another feature of diabetic coma is low temperature, the thermometer frequently registering 96° F. in the mouth or rectum, and having been observed as low as 86° F.

A most important sign of diabetic coma, though a negative one, is the absence of convulsions, which never occur in these cases, except in children.

Diabetic coma is to be distinguished from that due to alcohol, opium, and uræmic poisoning. In the first, the countenance is usually congested and the temperature either normal or but slightly lowered; there is also no dyspnœa, and the urine is free from sugar.

Opium-poisoning is characterized by extreme contraction of the pupils and by slowness and irregularity of the respiration. The diagnosis between opium-poisoning and diabetic coma must, however, sometimes be held in reserve, on account of the fact that, in the former, glycosuria is occasionally present. A case of this sort is mentioned by De Gennes,<sup>1</sup> in which the diagnosis of opium-poisoning was based upon the absence of the chloroform-like odor to which I have alluded.

Uræmic coma is very liable to be confounded with that of diabetes, loss of consciousness, a low temperature, and dyspnœa being common to both. Important points of distinction are the absence of convulsions in diabetic coma and the presence of the characteristic chloroform-like odor.

The prognosis of diabetes mellitus, irrespective of treatment, depends largely upon the age of the patient. In adults of middle age it runs its course, usually a fatal one, in from one to three years; in adolescents its

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<sup>1</sup> Thèse de Paris, 1884.



course is much more rapid, and is to be numbered by months, or even by weeks. In those of advanced life, on the other hand, glycosuria may persist for years without notable deterioration of health.

A few words with reference to treatment.

The absolute exclusion of starchy and saccharine food is the ideal treatment of diabetes, and if this can be persisted in for at least three months, a certain number of cases may undoubtedly be cured. All kinds of meat, except liver and oysters, may be allowed, and all vegetables except those which contain starch. A desideratum in the dietetic treatment of diabetes is a substitute for bread, the want of which is keenly felt by patients. Some of the samples of so-called gluten bread have been found, on analysis, to contain more starch than ordinary bread. Potatoes contain less starch than bread, and a baked potato is probably the least injurious form of amylaceous food.

In most cases, at least in early stages of the disease, sugar will soon disappear entirely from the urine, if the patient be placed upon an exclusively proteid diet. If such a regimen be persisted in, however, digestive disturbances are almost sure to arise, and, under such circumstances, the glycosuria will reappear. Prof. Bufalini, of Siena, has found that the tolerance of a strictly albuminous diet becomes much greater if thymol be coincidentally administered. The good effect of this drug in such cases is solely through its well-known action as an intestinal antiseptic. Bufalini believes thymol to be not only useful but necessary in cases of diabetes placed upon an exclusively proteid diet. There may be other intestinal antiseptics the use of which is indicated in diabetes, but there is none, in the opinion of Bufalini, equal to thymol. When albuminuria coexists with diabetes, an exclusive meat diet cannot be persisted in under such circumstances; the diet should be largely or exclusively composed of milk and buttermilk. There are different opinions as to the use of milk in uncomplicated diabetes, but when this disease coexists with chronic nephritis, the least injurious food is undoubtedly milk.

There is an undoubted relation between gout and diabetes mellitus, and when the patient afflicted with the latter is of gouty diathesis, good results will follow an alkaline treatment. The alkaline lactates, recommended by Cantani, the salicylates, or the carbonates, may be used alternately.

Opium is a drug of undoubted efficacy in this disease, and one for which there is a remarkable tolerance. It not only is of negative benefit by obtunding the senses of thirst and hunger, but it seems to have a positive effect in diminishing the excretion of sugar.

To resume, the alkalies, opium, and intestinal antiseptics (above all, thymol) are the only drugs upon which reliance should be placed in the treatment of diabetes mellitus, and these are subordinate to a strictly proteid diet.

*ADENOMA UTERI; VAGINAL HYSTERECTOMY.*

CLINICAL LECTURE DELIVERED AT THE NEW YORK CANCER HOSPITAL.

BY HENRY C. COE, M.D.,

Professor of Gynæcology in the New York Polyclinic; Gynæcologist to the New York Cancer Hospital;  
Assistant Surgeon to the Woman's Hospital.

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GENTLEMEN,—This patient is forty-three years of age, and has had four children. Her general health was good up to about one year ago last summer, when, after having had fifteen or twenty severe uterine hemorrhages, she applied for admission to this hospital. She complained of painful and profuse menstruation, and of severe pain in the back. Examination showed the os somewhat patulous, the uterus about three and a half inches in depth, the endometrium soft and spongy, bleeding when the sound was passed. She was approaching the menopause, and there was no reason at this time to suspect malignant disease, so a diagnosis was made of endometritis fungosa. Subsequently she was curetted and many fragments of tissue were removed. This was subjected to microscopical examination, and reported to be ordinary granulation tissue. No more hemorrhages occurred during her stay in the hospital, and on August 30 she was discharged "cured." For about two months after this she remained perfectly well, and was able to attend to her work; then she began to flow rather freely every two weeks, and to suffer from pains in the back and limbs and from headache. Her general condition remained good, but on account of the persistent and free bleeding I advised her coming into the hospital in order that I might treat her according to Dr. Polk's method of curetting, followed by the use of the intra-uterine tampon. She was accordingly admitted on March 15, 1892, and a few days later she was etherized and examined. The uterus was found to be three inches in depth and freely movable. The cervical canal was dilated with a steel dilator, and the endometrium thoroughly curetted. This time the curette removed first ordinary granulations and then about a dessertspoonful of soft, gelatinous material. A diagnosis was then made of probable malignant adenoma, (1) on account of the patient maintaining good general health, notwithstanding a history of considerable duration pointing towards malignant disease; (2) because of the frequent hemorrhages, unaccompanied during all this time by any foul discharge; (3) the early recurrence of the hemorrhages after a thorough curetting; and (4) because of the presence of this gelatinous material. This was sent to the pathologist of the hospital for examination, and he reported that there was no question about the malignancy of the condition, but he was unable to say positively whether the growth was an adenoma or a sarcoma, but it seemed very probable that the diagnosis of malignant adenoma was



correct. After the curetting the uterus was packed with iodoform gauze, and this packing was changed every forty-eight hours for ten days, when it was removed and the patient was allowed to get up. There is, of course, always some doubt in these cases, where there are no severe symptoms except the hemorrhage, about the advisability of undertaking a radical operation. Pozzi, one of our latest authorities, considers the condition we are describing as an early stage of carcinoma, and Ruge and Veil consider it as adeno-carcinoma. The uterus is not usually very much enlarged, and near the fundus there is often a circumscribed mass, although sometimes it occurs more diffusely. There is no doubt about its malignancy, for it infiltrates the deeper tissues, and undoubtedly recurs, and each time that it does so it is more malignant. The symptoms are less pronounced than are those of cancer, the principal one being irregular and profuse hemorrhages, which may last for several years before the general health of the patient is markedly affected. So far as I have been able to learn, there is no tendency of malignant adenoma to form metastatic deposits; it seems to be entirely confined to the corpus uteri. The sharp, shooting pains which have been described as accompanying this condition, I have met with in only one case, and there they were spasmodic, recurring every afternoon and lasting for two or three hours. The name "malignant adenoma" was first suggested by Schroeder, but it has been confounded with ordinary endometritis fungosa. You must distinguish between a simple hypertrophy and a malignant growth. In the former the mucous membrane only is involved, and when you scrape it away, if it returns at all, it is in the same form as before; in the latter the neoplasm springs from the mucous membrane, but invades the subjacent tissues; it has a distinct tendency to recur, and when it does so it is apt to be more malignant than before. I have only been able to find the reports of eight or ten well-authenticated cases of malignant adenoma in which the specimens have been examined, including two of my own.

The serious nature of the disease has been explained to this patient, and she has consented to submit to the radical operation of vaginal hysterectomy. As I said, she was curetted two weeks ago, and the uterus has been regularly packed with iodoform-gauze. This has kept the cavity sweet and clean, and has provided free drainage. She had no reaction as a result of this long-continued packing. It was stopped last Wednesday, and she was then placed upon a generous diet, and allowed to go around the ward. The bowels have been moved freely for several days past. She was given liquid diet, and has had nothing since this morning except a half-ounce of whiskey half an hour ago. After being etherized, her external genitals are shaved, scrubbed with green soap and water, and then with a one to two thousand bichloride of mercury solution, the rectum being thoroughly cleaned out and a tampon introduced. The vagina is also scrubbed and irrigated. I have already determined that this disease is entirely confined to the uterus, and that there is no complication, such as pelvic ad-

hesions or induration in the neighborhood of the organ. The heart and lungs have been found normal, and so has the urine. The object of this operation is to remove the uterus without disturbing the neighboring structures more than is absolutely necessary.

The first step in the operation is the careful tamponing of the uterine cavity with iodoform gauze to prevent the possibility of infection from the escape of any discharge from the uterus. Having accurately determined the depth to which the bladder descends—a very important point—I next pull down the uterus with a volsella, make a circular incision around the cervix, and dissect off the bladder with my finger as far as the utero-vesical fold of peritoneum. You remember that the broad ligament is encountered less than one-quarter of an inch from the vaginal junction, and that near this level is the lower branch of the uterine artery.

Having reached the base of the broad ligament, which can be felt distinctly as a sharp band extending across the pelvis, the peritoneal cavity is opened posteriorly, and a sponge is introduced to prevent prolapse of the intestines. I now pass my finger upward, and, using it as a guide, with the help of an aneurism needle, pass a stout ligature around the uterine artery. I divide the ligated portion as close to the uterus as possible, for the ureters enter the bladder one-quarter to one-half inch outside of the cervix. By a neglect of this precaution I once saw a prominent operator tie both ureters. The uterus is separated in a similar manner anteriorly, and is then pulled still farther down, and first clamps and then ligatures are applied to the ovarian arteries. I think it is well to remove the ovaries and tubes, because, even if they are healthy, if they are left behind in a woman who has not reached the menopause they have been known to give rise to various psychoses. Having removed the uterus, the stumps of the broad ligaments with the ligatures are then turned down into the vagina. To prevent prolapse and adhesion of the intestines each stump is covered with a piece of iodoform gauze, introduced well up into the peritoneal cavity, and the space between them is thoroughly packed with a strip of the same. The middle gauze packing will be changed in a week, but the lateral pieces may be left undisturbed for ten days.

The patient has lost very little blood during the operation, and her pulse has remained at about eighty or ninety. I think that if a radical operation is performed in such cases at this early stage, when the disease is circumscribed and the general health is yet unimpaired, there is an excellent prospect of obtaining a permanent cure.

Now it only remains to examine the specimen to determine whether or not there were good grounds for performing the operation. I have cut the uterus open along its anterior surface, and you see at the fundus a distinct circumscribed mass as large as half a marble, which presents all the appearances of the growth previously diagnosed. You will observe that the uterine cavity is perfectly aseptic, the result of the preparatory curetting and tamponade.

[As was expected, the patient had an uninterrupted convalescence.]



*THE DIAGNOSIS OF CHRONIC RHINITIS.*

CLINICAL LECTURE DELIVERED AT THE VANDERBILT CLINIC, COLLEGE OF PHYSICIANS  
AND SURGEONS.

BY GEORGE M. LEFFERTS, M.D.,

Professor of Laryngoscopy and Diseases of the Throat, College of Physicians and Surgeons, New York.

GENTLEMEN,—I ask your attention to-day to the subject of nasal catarrh, upon which a great deal is and has been written by the medical profession, and about which too much is said by the laity. Chronic catarrh of the nose is a subject about which we hear a great deal, and it is important that the physician should be able to recognize it when present, and likewise to exclude it when it is absent, and, above all, he should know how to treat it correctly and skilfully. Does the general practitioner always examine his patients who come to him and complain of nasal catarrhal trouble? Does he make his own diagnosis? Is it not too often the case that the physician—without instruments or the knowledge—accepts the diagnosis of the patient? He makes no examination and prescribes a nasal douche. The patient continues to use this douche for an indefinite period, and may thus excite a nasal catarrh where perhaps none existed before. The number of remedies advised in these cases is unlimited. I have known a man to use his own urine, snuffed up the nostrils, and I have known a lady to use pure cologne-water for the same purpose. “Sure cures” multiply rapidly. Catarrhal snuffs and salves crowd the counters of the drug-shops. Nasal douches are manufactured and sold by the thousands. This field is a rich one for the quack: he pictures the disease in its most disagreeable aspects. He confounds other diseases—notably syphilis—with nasal catarrh. In short, the quack frightens the patient.

A patient comes to you and states that he is suffering from chronic nasal catarrh. He complains of a constant dripping of mucus in the throat. This is a very common symptom, but, as a matter of fact, mucus never drips in anybody's throat constantly, and in the majority of cases you will find that this sensation is due to an elongated uvula, with a relaxed throat and a chronic pharyngitis. These patients also fear that the catarrh from which they are suffering will develop a disagreeable odor. Much of this nonsense about this fetor or stench from the nose can be prevented. You never have it excepting in atrophic or fetid rhinitis, and even here you do not have it if the nose is kept clean. Again, you find it in the disease misnamed ozæna, which simply means stench, and which is found in syphilitic or strumous cases, where there has been necrosis of the nasal bones. But syphilitic or strumous ozæna has nothing whatever to do with nasal catarrh. No man ever saw or will see a case of uncomplicated nasal catarrh where

there was caries or necrosis of the nasal bones. And yet we continually hear of nasal catarrh with the nasal bones rotting away. Here again the quack comes in.

There are more forms of catarrhal disease of the nose than one. The day has gone by when a physician can call all diseases of the nasal membrane "catarrh." When you can distinguish one form of nasal catarrhal trouble from another, then you will be in a position to carry out scientific treatment. Some forms are curable; others are not.

I confine myself to-day to catarrhal conditions of the nose, and have nothing to do with deviations of the nasal septum, adenoid vegetations, polypi, or cartilaginous growths. I am going to speak of three forms of catarrhal inflammation of the nasal mucous membrane:

1. Simple uncomplicated rhinitis.
2. Hypertrophic rhinitis.
3. Atrophic or fetid rhinitis.

Let me say a few words about the pathology of these three forms of chronic rhinitis. The first is a simple chronic catarrhal inflammation of the nasal mucous membrane, unattended by any structural changes. The natural secretions are increased in quantity, and may be either mucous or muco-purulent. There are absolutely no other symptoms. There is no thickening; no hypertrophy; consequently the patient breathes easily and uninterruptedly; there is no interference with the sense of smell; there is no change in the voice. Upon examination you will find that the mucous membrane is of a deeper hue than normal, and that it is flecked here and there with little patches of secretion. In this disease, in its earlier stages, the patient suffers no inconvenience: he simply must blow his nose a little oftener and he is a little more prone to attacks of cold in the head. The symptoms are so slight that he allows them to run on uninterruptedly for weeks or months until the colds in the head become more frequent and persistent, and he gradually drifts into the second variety of chronic catarrhal inflammation,—the hypertrophic.

We now have marked structural changes; a proliferation of all the normal elements of the mucous membrane; a true hypertrophy; the whole mucous membrane of the nasal passages, but especially that over the lower turbinated bones, is markedly thickened and relaxed; the plexus of blood-vessels, a true erectile tissue, which underlies the membrane in the latter locality, becomes enlarged; the glands at the vault of the pharynx participate in the pathological process and likewise hypertrophy.

Secretion is excessive, thick, and tenacious, showing that the glandular elements of the mucous membrane have not escaped.

Such a hypertrophy occludes more or less, perhaps permanently and completely, but more commonly intermittingly and partially, the nasal passages; the patient breathes with difficulty, his voice becomes nasal in character, he experiences much discomfort, and decides for the first time to consult a physician.



This is the class of patients that you will see the oftenest; fortunately you are able to do them a great deal of good,—how, I shall tell you next week.

As a result of this process of intranasal hypertrophy, in certain cases following it, when it has lasted some time, or more rarely occurring early in the disease, before hypertrophy is far advanced, the third form of nasal catarrh develops. This we call atrophic or fetid rhinitis. I have told you that it is by no means as common as the preceding varieties. It means this: Remember that in the hypertrophic form we had in the deeper layers of the tissues a deposition of newly-developed connective and elastic tissue. This may cause two results: first, by its mere presence and amount, it may press upon, cause atrophy of, and destruction of function in, the glands and follicles which stud the mucous membrane. It crowds them to death, so to speak. This may occur, as I have said, early in the disease; if later, as it commonly does, the process of atrophy of the mucous membrane, and especially of the glands, has a different explanation; it is now due to the contraction that takes place in the connective and elastic tissue that has been developed in the hypertrophic form of the disease. The more and more firmly this becomes organized, as time goes on, the more and more completely does it compress and destroy the function of the secreting glands and follicles, and with them the mucous membrane in which they lie and the submucous structure atrophy. Even more, if the process be long continued, the effect of this continued pressure, aided by the pressure of inspissated secretions or crusts, is exerted upon the turbinated bones themselves. Atrophy, interstitial absorption, is set up in them; they become smaller than normal, and the result is shown in the abnormally large, wide, roomy nasal passages, covered by a tense, dry, shining mucous membrane, often with hard crusts of mucus covering it. In these cases you can often look directly through the nasal passage back into the pharynx, so wide is it.

The symptoms that these pathological changes occasion are not as marked as in the hypertrophic form. There is plenty of room through the nose for the respiratory current to pass, hence there is no obstruction to breathing experienced by the patient. The discharge, instead of being profuse, is scanty, and dries into crusts and scales. There is no interference with the timbre of the voice. The only symptoms, then, are interference with the sense of smell, as a rule, the atrophic process having extended upward to the olfactory region, and affected the terminal fibres of the olfactory nerve, and general uneasy sensations, sometimes amounting to pain, with excessive irritability and sensitiveness to atmospheric changes.

So much for the atrophic form, but I have coupled with this term the one fetid. The latter condition follows the former closely,—indeed, is part of it if it has lasted any time,—and I see no need, clinically, to make a distinction between the two. Fetor is the direct result of the atrophy, in this way: the secretions are scanty and tenacious, as I have told you, and become more and more so as atrophy of successive follicles and glands

takes place. The explanation of this is simple: The atrophic process has affected first and chiefly the *serous glands*, which are numerous in the nasal mucous membrane; their function is, by their secretion, to render the nasal mucus thin and watery, but, this function being abolished by their destruction, the mucus secreted by the mucous glands, large numbers of which still remain intact, is viscid and tenacious; it adheres to the mucous surfaces, and rapidly desiccates in the respiratory current of air. Large crusts and scabs thus form readily and cling closely in the nasal passages and at the vault of the pharynx. Impacted in the narrowed parts of the canals, pent up beneath the turbinated bones, constantly growing in size by the addition of the secretions poured out beneath them and prevented from escaping, it is no wonder that putrefactive changes set in, that the matter imprisoned decomposes, that fetor is established; and not only this, but the irritation of the mucous membrane, caused by the presence of these pent-up purulent discharges—for from muco-purulent to purulent they rapidly change—reinfected itself, so to speak, by its discharge, excites further discharges, and thus constantly aggravates the disease.

So passes the atrophic form of rhinitis into the fetid,—not always, though, fortunately for the patients, and not very rapidly in any case. The symptom of the condition now established may be given in one word: fetor,—stinking truly in every sense, disgusting to the patient, disgusting to his friends, disheartening to the physician, who must acknowledge his inability to do more than relieve his patient,—for cure the condition which gives rise to it he cannot.

I pause now to recapitulate. Clinically we see three forms of chronic rhinitis. 1. Simple uncomplicated chronic rhinitis. 2. Hypertrophic rhinitis. 3. Atrophic or fetid rhinitis. Certainly these names and forms must be easy to remember.

How important for your success in their treatment and views as to prognosis is the remembrance of this division based on their different pathological nature I have tried to impress upon you.

In conclusion, I urge upon you again the necessity of knowing just where your patient stands in the pathological scale before you attempt any treatment; this can only be done by making a careful examination of the parts, by direct anterior and posterior rhinoscopy.

At my next lecture, I shall give you some simple rules by means of which any one of you can treat his cases. There is no royal road to success in treatment, but with patience and persistence much good can be done. Success can be attained much oftener than is commonly believed, and by success I mean complete, permanent cure.



*SYMPHYSIOTOMY.*<sup>1</sup>

CLINICAL LECTURE DELIVERED AT THE CLINIQUE DE LA FACULTÉ, IN THE MAISON  
D'ACCOUCHEMENTS BAUDELOCQUE.

BY PROFESSOR A. PINARD.

GENTLEMEN,—At the present time, when we find ourselves in the presence of a woman in labor who has pelvic deformity, which we have diagnosticated by manual pelvimetry, and upon whom, having tried the forceps, we find that it is impossible to make room enough for the expulsion or the extraction of the fœtus through the natural passage, we are obliged to choose between two methods by which the patient can be delivered: either by crushing the head and delivering the remains through the vagina, or else by performing the Cæsarean operation.

If the child is dead, there is no question what we should do: the indications all point to the crushing operation as being the most justifiable, and, thanks to the basiotrite, that marvellous instrument for which we are indebted to Professor Tarnier, cephalic embryotomy can be done with security and ease. All those who have employed this operation will agree with me that it is one that can be performed even more easily than an ordinary forceps application to the superior strait, and the prognosis for the mother is quite as good in either case.

But what is the situation when the child is alive? Here the advisability of embryotomy is an open question. Many prefer the Cæsarean operation. The French accoucheurs are mostly of the opinion that it is best to sacrifice the fœtus, by the basiotrite, in order to save the mother. A large number of foreigners, however, prefer the Cæsarean operation when the case has not been complicated by attempts at extraction by the natural outlet. What are the results of these different methods? In forty cases where basiotripsia was performed on the living child, we have:

Women saved.....	40.
Infants sacrificed .....	40.

Among twenty-eight healthy women upon whom the Cæsarean operation was performed, we have, according to Leopold (1890):

Women cured .....	25.
Deaths .....	3.
Infants saved .....	28.

So that to-day, notwithstanding the great progress made in late years, we

<sup>1</sup> Prepared, with the consent of the author, by Dr. Thomas Linn, our Paris correspondent.

are still obliged either to do an operation that may kill the woman, or do another that will save the mother but surely kill the child.

Shall we always remain in this cruel dilemma? Must we always be compelled to yield to the necessity of killing infants or else submit the mother to the dangers of a surgical operation?

I hope not, gentlemen. I think that this will be avoided, owing to an operation that was invented by one of our countrymen, called symphysiotomy, which was first performed on the wife of a soldier in 1777, by M. Sigault, assisted by M. Leroy, a celebrated surgeon of that time.

It astonishes you, I am sure, to hear that I have great hopes of an operation that has almost been forgotten for many years. While I cannot give you a complete history in this clinic of the division of the pubic symphysis, I must, however, recall to your minds a few facts, so that you will understand why this great operation was undertaken, its fall from favor, and its present resurrection.

In 1768, M. Sigault, a student of medicine in Paris, submitted to the Academy of Surgery the proposition that women might be delivered by symphysiotomy. The proposal was received with ridicule and the young student was considered a madman; but in 1777 he did his first operation with success, and it was followed with great benefit to him,—he was soon famous and was overwhelmed with honors. The faculty of medicine had a medal engraved for him, and he was considered as a benefactor of his race. But, as is almost always the case when a new operation is proposed, a large number of cases presented themselves both in the city and country, while abroad many surgeons took it up, with the result that a great fight took place on all sides between the symphysiotomists and the Cæsareanists.

Among the most ardent adversaries of symphysiotomy was Professor Baudelocque (whose name is given to this clinic). He had passed a thesis at the Paris faculty against the operation, and probably did not wish to renounce his first opinion. Be this as it may, Baudelocque, who had made a number of experiments on the cadaver, finally said that when the women died it was always owing to the operation, and at the autopsy the lesions found were so frightful that M. de Mathis, who had assisted him at a post-mortem, fainted at the sight. As to the women who got well, says Baudelocque, some of them perhaps had not really been operated upon, and for those that were operated upon it was useless, as the accouchement would have taken place spontaneously. So that, according to this writer, Sigault's operation did not give good results, and, according to the experiments that Baudelocque made, he pretended that the sacro-iliac symphysis would tear if there was any widening of the pubic bones to such an extent as two inches and a half, and, notwithstanding this, the augmentation of the anterior-posterior diameters would be insufficient. These criticisms of Baudelocque's were indorsed by Madame Lachapelle; and notwithstanding that Antoine Dubois had operated on Madame Delaplace twice with success, and M. Gardien had written in favor of the operation, still it was



given up and soon disappeared from French practice. P. Dubois and Desormeaux condemned it, and Velpeau, Jacquemeir, and Cazeaux, although they thought it might be useful, still did not practise it. Stoltz preferred the Cæsarean operation. Professor Tarnier seemed of the same opinion, but still even he wrote, in the text of the well-known *Atlas*, published by Sée & Tarnier, "It is neither audacious nor hasty to believe that symphysiotomy will one day be the operation to complete premature confinement." M. Bouchacourt, in his article on Symphysiotomy in "Dictionnaire encyclopédique des Sciences médicales," which I advise you to read, says that he made experiments with M. Polosson, which prove the operation to be very satisfactory; but, notwithstanding some very good results by the Naples school, he did not recommend the operation.

In Germany, E. J. de Siebold wrote, "There is a great deal of truth in Baudelocque writing that in symphysiotomy every time they saved the mother they killed the child, and every time they saved the child they killed the mother, and when they were both saved, the operation was not necessary." Further on he adds, "Time and experience have shown that this operation is only a historical curiosity, at least for those who are not blind," and he uses this proverb: *Felix quem faciunt aliena pericula cautum*.<sup>1</sup> At present there is not the slightest mention of symphysiotomy, even as an operation of historical interest, in Germany. Zwiefel (1889) says the whole idea is wrong. Fehling<sup>2</sup> says, "When the woman comes to consult us at term, it is best to advise Säger's operation if the child is living, and craniotomy if it is dead. This is better than symphysiotomy, and on this point I am sure I hold the same opinions as the English, French, and Germans." Winckel also condemns the operation. In the fourth edition of Fritsch's work (Breslau, 1888) there is no mention made of the operation. The word symphysiotomy does not exist in the table of contents of Schröder's tenth edition. The same distrust of the operation exists in England. In Italy, on the other hand, symphysiotomy took a firm hold from the first, and is considered a good operation. It has been performed a number of times by physicians in Naples. The results were published, by Professor Morisani, at the London Congress, in 1886, and from 1887 up to the present date he has sent me the details of all the operations of this nature, which I will give you presently, only stopping here to thank him. I shall not now go into the reasons why this operation has fallen into disuse, nor say why the Naples school have continued it; suffice it to say that with modern antiseptic precautions this operation can be resorted to without danger. Let us discuss the following questions:

1. Can we by symphysiotomy obtain, without serious lesions, a notable increase in the size of the human pelvis? And if so, what will be the increase in the diameters?

<sup>1</sup> Essai d'une Histoire de l'Obstétricie, par Siebold, 1892.

<sup>2</sup> Müller, Handbuch der Geburtshülfe, 1889.

2. Is symphysiotomy an operation that can be done by any one? and how should it be practised?

3. What will the results of the operation be, as regards the consolidation of the pelvis? What effect will it have upon maintaining the upright position, as in walking, and upon future confinements?

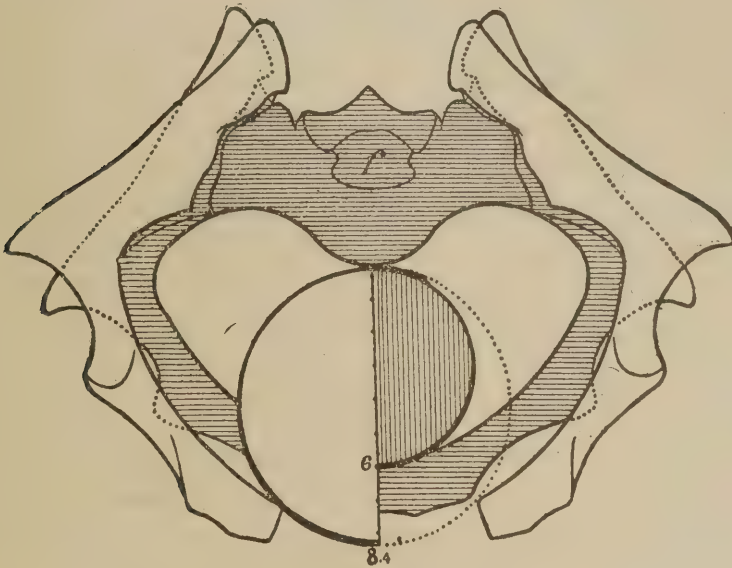
As to the first question, the results published by Baudelocque and those since his time are absolutely contradictory. For some writers state that symphysiotomy would only make a gain of a few millimetres, while others claim that the antero-posterior diameter (conjugate) would be increased much more. But these last thought that this result could be obtained only by the tearing of the sacro-iliac ligaments, which would cause a dislocation of the pelvic bones, with terrible consequences. Let us get at the truth of this matter by the aid of some recent experiments made by Professor Farabeuf (professor of Anatomy, Paris Faculty) and Dr. Varnier; without drawing any conclusions let me show you a cut of a pelvis made at the level of the superior strait. It is ten and eight-tenths centimetres in diameter from before backward, and is from a woman who died of nephritis, nine days after giving birth to a child at term; Dr. Labadie-Lagrave has allowed us to use this pelvis. By pressing open the pubis six centimetres, we can make this pelvis, which is ten and eight-tenths centimetres, one of twelve and four-tenths,—that is to say, the antero-posterior diameter has been increased fourteen millimetres (four-twenty-fifths of an inch). The sacro-iliac articulation is open in front, and the powerful posterior ligaments are intact, and cannot be injured by the opening of the pelvis, no matter how much we may force it. The thin anterior ligament is not torn and resists well; it is simply drawn away from the anterior face of the iliac bone. I take out the piece of wood that has been put in to widen the pelvis, and you see that the pelvis is now closed, and you will have to look very closely to find out where the parts were drawn apart.

Look now at this pelvis: it belonged to an old woman, who died from a complaint quite different from a puerperal condition. The saw did not work so well here as it did on the other pelvis, as it deviated a good deal towards the left side; but you can see, all the same, that an opening of three centimetres has not drawn away the anterior ligaments. So that in these two quite different pelves, one of a young woman who died in confinement, and the other of an old woman, it can be readily proved that (1) it is quite possible to obtain a notable widening of the pelvis; (2) that, if kept within reasonable limits, it is done without any alteration of the pelvis, and without any drawing away of the anterior ligaments of the sacro-iliac symphysis. In order to show the enlargement of the pelvis it is possible to secure by drawing apart the pubes, so as to make an opening (inter-pubic) of six centimetres, let me show you these two diagrams (Figs. 1 and 2), constructed by Professor Farabeuf. The explanation written below them will prove to you what results can be obtained. I put to one side other questions for the moment, as I simply want to prove that



symphysiotomy can be performed without causing any serious disorders of the articulations involved.

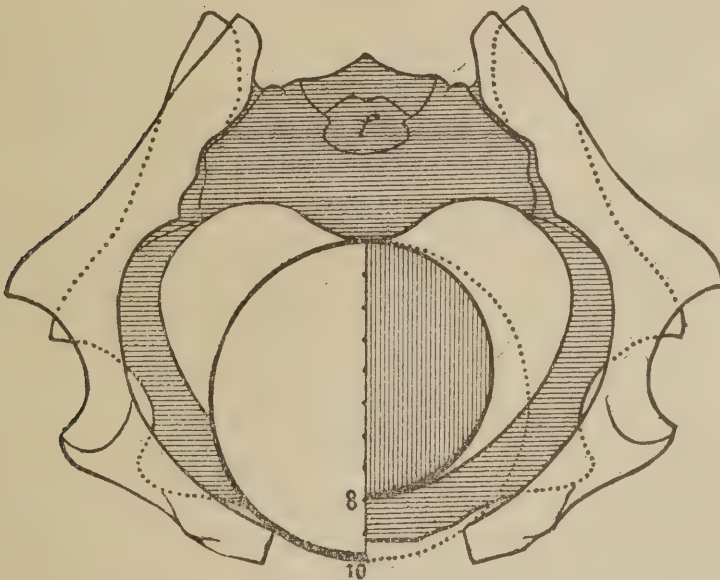
FIG. 1.



Section, at the level of the superior strait, of a very narrow pelvis, with a promonto-pubic diameter of six centimetres. The shaded portions show the pelvis before the section of the symphysis, and the white after opening sixty millimetres according to this section.

The diameter of the white sphere, which is taken in by the widened pelvis, is to the diameter of the black sphere, which is seen in the pelvis before opening it, as 84:60. The volume of the white sphere is to that of the black one as 310:113, or almost *three times as much*.

FIG. 2.



Section, at the superior strait, of a pelvis moderately deformed, having a promonto-pubic diameter of eight centimetres. The shaded portions show the pelvis before the symphysiotomy, and the white after it has been stretched sixty millimetres by that operation.

The diameter of the white sphere, which is in the dilated pelvis, is to that of the black one, in the normal pelvis, as 98:80. The volume of the white sphere is to that of the black one as 488:267,—*nearly double*; that is to say, a foetus of three thousand grammes (usual size) would be smaller for the cut pelvis than one of two thousand would be for the intact one.

Now as to the operation. Those who have performed it say that it is a relatively easy one. Dr. Spinelli, former assistant to Professor Morisani,

not only gave us the fullest information in regard to symphysiotomy as performed in Naples, but also did the operation for us on the cadaver. I think that a very simple method of operation can be used, and that a simple bistoury, with a short and solid blade, rather thin, will answer in most cases, and that the symphysis can be divided without danger of wounding either the peritoneum or the bladder. All antiseptic precautions having been taken, I should place the woman in the dorsal decubitus on the border of a bed, low enough to see clearly the central line to be incised. I should stand close to the patient, and, having shaved the part and marked the median line with a blackened string, I should incise the skin along this line, going through the prepubic fat with care, holding the bistoury inclined, and following the median vertical level. An incision of from eight to ten centimetres would do, which should fall close to the clitoris, and slightly deviate here, so as not to wound that organ or its blood-vessels. I should then separate the rectus abdominalis muscle in the superior part of the wound, to allow my finger to enter into the prevesical cavity and protect the bladder and feel for the border of the pelvis. Then, having again taken the middle line, I should incise the symphysis by several passes of the bistoury, going from above downward. If I can judge from operations on the cadaver, when the symphysis is cut the pubis will open itself; if not, I should have two aids draw the thighs apart. I should keep the subpubic ligament for the last, and only cut it if I could not force it apart with my finger; nor would I stop until I could pass my finger between the articulating surfaces of the symphysis pubis with ease; and even then, before performing any obstetrical operation, I should assure myself by a careful abduction of the thighs that the section was completed. Having assured myself that the pubis on both sides was free, I should make an antiseptic temporary dressing and become again an accoucheur.

I must now answer the third question, as to the consolidation of the pelvis after the operation. We know that many times the symphysis pubis has been ruptured during delivery, and that consolidation is the rule. There are many cases of this kind. I saw a patient in 1883, in my service at the Lariboisière Hospital, who had a deformed pelvis, and during the application of the forceps, while I was making a movement with one finger to rotate the blades, I heard a crackling sound. The child was born naturally enough, without anything about its head to account for the sound; and on making an examination of the mother, I was frightened to find that the symphysis pubis was ruptured, and I could put two fingers between the bones. Six weeks afterwards this woman walked away from the Maternité, and we did not even put a bandage on her. She had a child afterwards born at term and without forceps. I was already confident in my own mind about the procedure before this observation, as I knew that Antoine Dubois had performed symphysiotomy twice on the same woman with success. But the results that are given by the Naples school do not leave the slightest doubt in my mind. After the operation consolidation within a month is



the rule. It is, of course, evident to you that during the cure it would be well to put on some apparatus to immobilize the pelvis, such as a plaster bandage or a mechanical belt.

Now, if I have answered all the objections, and proved that this operation is an easy one, and that it gives the width that I mentioned, while the consolidation is rapid and sure, I ask, Why should we permit the Naples school alone to enjoy the benefit of symphysiotomy? It is time that we take advantage of all the good surgical procedures of the day. No doubt the failure of the operation in former times was due to infection, and not to the operation in itself. What makes the modern success of the Cæsarean operation? Is it because some important modifications have been added to the methods of Porro and Sänger? No; certainly not. It is simply owing to antiseptis or asepsis. In regard to the results of symphysiotomy, I had yesterday the statistics of Professor Morisani's operations in Naples, and he gives twelve mothers recovered out of twelve cases treated, and eleven children saved out of the twelve.

Taking the antiseptic methods of to-day, and the better knowledge we have of deformed pelves, and guided by the certainty of our modern methods of exploration, aided by good surgery, I think that symphysiotomy should be reinstated. If I am right in my calculations, the lives of many women will be saved, as well as children, and the accoucheurs will no longer have to impose upon themselves the torment of having to crush to death babies full of life that it is their mission to save.

# REVIEW OF MEDICINE.

## MEDICINE.

IN CHARGE OF JUDSON DALAND, M.D.,

Instructor in Clinical Medicine and Lecturer on Physical Diagnosis and Symptomatology in the University of Pennsylvania, and Assistant Visiting Physician to the University Hospital.

ASSISTED BY

JOSEPH P. TUNIS, M.D.,

Philadelphia.

**Rheumatismal Endocarditis.** (*Archives Générales de Médecine*, 1891.)—Professor Agrégé Hanot states that this disease was discovered by Bouillaud between the years 1835 and 1841, and this writer has said that in acute generalized rheumatism the coexistence of pericarditis or endocarditis is a rule, or law, and its non-appearance is the exception. Bouillaud regarded exposure as the cause of endocarditis, producing it in the same way that cold causes rheumatism. Klebs was the first to consider rheumatismal endocarditis as of microbial origin. He found on the free border of the heart-valves some micrococci that he called *monadines*, and considered them the cause of the endocarditis. In spite of his researches and those of others of later date, we do not as yet know what is the exact etiological factor of rheumatic endocarditis. The infectious nature of rheumatismal endocarditis is not doubted, as the microbe is always found located upon the free borders of the valves of the *left side* of the heart, which is the oxygenated part where the *aërobic* microbes are found. At an early stage of the disease some efflorescent, round, translucent or grayish-white substances about as large as a mustard-seed are found, while the endocardium is raised in places covered with these vegetations. These lesions are supposed to be the *point de départ*, as the French call it, of embolisms. Ziegler, at the German congress at Weisbaden, makes out three kinds of these vegetations: the first are due to thrombosis, the second are partially formed of connective tissue, and the third are *entirely* formed of this tissue. It is known that a certain number of these valvular thrombi and the connective proliferations are due to the presence of micro-organisms, and that they are the cause of necrosis of the tissue. In some cases small purulent foci are found, called *endocardiac pustules*; therefore Hanot believes that the endocarditis is pyogenic in origin and that rheumatic arteritis is as common as rheumatic phlebitis.

The writer states that the *symptoms* of endocarditis vary according to the seat of the lesions and the condition of the heart-muscle. It is



also important to state that they vary in accordance with lesions of the heart that may have existed previously: for instance, in a girl who had rheumatic anæmia, the heart-sounds proper to it were heard with the new lesion. As a rule, the pulse increases and sometimes becomes irregular, while there may be a dicrotic pulse developed. Palpitation and præcordial oppression with dyspnœa, and an increase of fever, are common. On *inspection* a slight prominence may be noticed over the præcordial region. *Palpation* gives a quick, sharp impulse of the heart-beat, but it is *auscultation* that shows the real sign of the disease,—the *souffle*. This is first heard from the third to the twelfth day. It is heard over the apex of the heart and during the first sound. It is not always mitral, but may be aortic or tricuspid. Its cause must be sought for in the vegetations that prevent the valves from closing properly. A paresis of the tensor muscles of the valves may also be a cause. This disease passes to a chronic stage nearly always: a cure is rare; when death follows, it is owing to pericarditis complicated with myocarditis bringing about cardiac failure. Cardiac coagulations occurring during syncope, by obliterating the orifices, may cause sudden death. Endocarditis may seem to be mild in form and yet carry the patient off suddenly by death from embolism. The *prognosis* must, therefore, be very guarded, as the lesion cannot be remedied. It must prove fatal finally.

**Arterio-Sclerosis of the Heart.** (*Société Médicale des Hôpitaux*, 1891.) —Drs. Huchard and Weber call attention to arterio-sclerosis of the heart which is *localized* in certain regions of the organ. Some of these localizations are readily seen in clinical medicine,—those, for instance, that are close to the apex, for sclerosis may exist in a localized area only, and, from a histological point of view, it forms a solid block just at the point of the heart. These localizations are a proof that sclerosis of the heart is of arterial origin. It is useful to remember this, as they give rise to sudden death. So that the seat of the lesion, in giving an account of autopsies, is important in determining the exact cause of death.

**Mitral Stenosis and Tuberculosis.** (*Gazette Hebdomadaire*, 1891, p. 441.) By Professor Potain.

The coexistence of heart-diseases and tuberculosis is not usual. Rokitansky indeed tried to establish an absolute antagonism between the two diseases; but this is an error, for certain heart-diseases seem to predispose patients to phthisis,—for instance, aneurism of the aorta and obstruction of the pulmonary artery. In both cases, whether by compression or the diminution of the calibre of the blood-vessels, there is a pulmonary *ischæmia*, which is particularly favorable to the development of tuberculosis. Of fifty-four cases of pure mitral obstruction upon whom an autopsy had been made during Dr. Potain's hospital service in the last fourteen years, nine had pulmonary tuberculosis, so that this disease occurred once in every four

cases. The mitral stenosis was secondary to the tuberculosis and seemed to come from it; perhaps it was owing to an endocarditis caused by the bacillus fixing itself on the borders of the valves, which were found to be attacked. In any case, it remained on the edges, as the rest of the valves were found free from lesions. In nine of these cases the tuberculosis seemed to have been cured. In brief, M. Potain thinks that tuberculosis may be first present in the lungs, and then invade the mitral valve and fix itself on its borders, and this by causing an adherence of the valves progressively brings about a mitral stenosis. When this occurs a blood stasis is produced in the lungs that is an obstacle to the development of the bacilli there.

**Acute Diphtheritic Myocarditis.** (*Archives de Médecine expérimentale*, 1891, p. 646.) By Rabot and Philippe.

The question of heart-trouble in diphtheria is still very much discussed: some writers, like Bristowe, Kranvier, Hillier, Mosler, and others, claiming that there are alterations of the parenchyma; Leyden and Hirschfeld speak of interstitial myocarditis, while Hayem, Unruh, and Huguenin admit that there are both lesions of the muscular and connective tissue.

MM. Rabot and Philippe, having examined the hearts of forty-five persons who died of diphtheria, conclude that the two kinds of lesions exist, but that they are distinctly different: the first, a group of lesions which has no clinical history, comes from the general poisoning of the system, while the second group, or the interstitial lesions, whose evolution by the symptoms produced is clear and defined, merit the name of *acute diphtheritic myocarditis*. As to the parenchymatous lesions of the myocardium: the hearts that were examined with these lesions were more or less soft, but they did not show any sign of acute endocarditis. The microscopic lesions of the myocardium resembled those lesions described by Hayem, Zenker, Waldeyer, and others, as occurring in the muscular structure of the hearts of typhoid cases, such as fatty degeneration, granulations, and atrophy. Sometimes the fibres were only partly altered, and these alterations were certainly those that are due to the general poisoning of the system.

As to the interstitial myocarditis: the hearts in these cases were found very often dilated, while the general consistency of the muscular tissue was not very different from the others. The microscope showed that the fibres of the heart-structure were interrupted from time to time by inflammatory foci, showing very clearly in the intermuscular spaces there is a periarthrititis but not an endoarteritis, so that the authors of this paper think that this lesion is independent of the vessels and nervous system, and is simply interstitial.

This cardiac complication shows itself after the diphtheritic patient is getting better of his throat complaint. He is convalescing, when syncope suddenly develops; to this an extreme paleness is added, a great muscular weakness, and the pulse becomes remarkably weak, so as not to be perceptible. It may also have any of the forms of irregularity. Albumen will again be



found in the urine. The tachycardia becomes intense, and a systolic *souffle* is heard at the apex of the heart. While it is a very serious condition, still MM. Rabot and Philippe have seen as many as ten cases recover.

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## THERAPEUTICS.

IN CHARGE OF ALEXANDER D. BLACKADER, B.A., M.D.,  
Professor of Therapeutics, McGill University, Montreal, Canada.

On the Treatment of Tuberculosis. (*New York Medical Journal*, May 21, 1892.) By Francis Kinnicutt, M.D.—In a most interesting paper, well worthy of careful reading, Dr. Kinnicutt thus speaks of the use of *tuberculin*. “A rather large clinical experience, now extending over a period of eighteen months, leads me to reiterate an opinion previously expressed that tuberculin contains a remedial principle.” It is his earnest belief that continued and exhaustive investigation of Koch’s discovery will lead either to modifications of the original extract, or to the preparation of a new extract based upon a similar principle, which will place in our hands an agent, specific in character, and remedial in tuberculosis to a degree hitherto believed to be unattainable. In reference to the use of the cantharidal preparations, he states that their remedial effects, while occasionally striking, especially in the case of laryngeal tuberculosis, fall short of securing for them, in his opinion, a permanent place in the therapeutics of tuberculosis. With regard to the use of creosote, he says, “Experimental investigation shows in the most positive manner that this drug, administered even in heroic doses, is incapable either of preventing the development of experimental tuberculosis, or of arresting its progress. The explanation of any favorable influence of creosote on sclerotic processes, which clinical observations may indicate, should seemingly be sought in the improved nutrition which obtains through its use rather than by the exercise of any specific action. Guaiacol represents the active principle of creosote, and may appropriately be substituted for it. Carbonate of guaiacol possesses the advantage of being a simple, definite crystalline substance which can be obtained chemically pure. It is a neutral salt, tasteless as well as odorless, does not produce digestive disturbances, and decomposes in the intestine into guaiacol and carbonic acid. These characteristics have been demonstrated during its use in St. Luke’s Hospital. He quotes Seiferts and Holscher’s theory, that the favorable influence ascribed to the creosote preparations is due to the fact that the guaiacol combines in the blood with the toxic albuminoids engendered by the disease, rendering them non-toxic, and assisting in their elimination. He states that the observations thus far made in St. Luke’s Hospital lead him to believe that the guaiacol carbonate may be substituted very favorably for both creosote and guaiacol. In speaking of the sixty-five cases under his

care during the past winter, he says, "A very distinct impression has been made on my mind in observing from day to day the cases treated by modified (Hunter's) tuberculin, that its stimulation of the nutritive processes is not so marked as its effect upon the specific lesions. Creosote, on the other hand, has seemed to possess the former quality in a greater degree. . . . The number of cases treated, while too small to permit the expression of a positive opinion, is large enough to indicate in the strongest manner the desirability of continued investigations of the apparently specifically beneficial effects of this modified tuberculin."

**Effects of Medicated Inhalations.** (*Lancet*, No. 3586, May 21, 1892.)—Dr. A. Irsai, of Buda-Pesth, has made some instructive laboratory observations on the effects of the inhalation of various substances on the lungs and air-passages. Inhalation of air impregnated with the vapor of oleum terebinthinæ produced distinct pallor of the lung-tissue, due, doubtless, to spasmodic contraction of the pulmonary capillaries. Oleum juniperi and oleum pini sylvestris produced similar results, but less in degree. Oleum eucalypti, oleum anisi, oleum menthæ and menthol, similarly inhaled, produced scarcely any change in the color of the lung-tissue. Creosote, thymol, and in a still greater degree guaiacol, produced redness, with great hyperæmia of the lungs. From these observations Dr. Irsai concludes that in acute catarrhal affections, with swelling, hyperæmia, and profuse secretion, those substances which produce anæmia of the lungs should be chosen, while in chronic torpid conditions, or in phthisis, where the supply of blood and the nutrition of portions of the lung are defective, substances which induce hyperæmia should be used. With any tendency to hemorrhage creosote or guaiacol may prove dangerous.

**The Absorption of Potassium Iodide by the Rectum and the Rapidity of its Elimination.** (*Rif. Med.*, April 26, 1892; *Brit. Med. Journal*, May 21, 1892.)—Calantoni, from a number of observations on man and animals, has ascertained (1) that absorption of potassium iodide, when introduced into the rectum, is as rapid as when given by the mouth, and this rapidity may be increased by warming the solution to 35° or 37° C.; (2) that the time during which elimination goes on is practically the same by either method of administration. Rectal injections of this drug may, therefore, be substituted for the ordinary methods of administration.

**Hydrochloric Acid in the Treatment of Vomiting.** (*Lancet*, No. 3584, May 7, 1892.)—Dr. Alkiewicz, writing in the *Nowiny Lekarskie*, says that he has found much benefit in various kinds of vomiting from small and frequent doses of hydrochloric acid well diluted. The cases mentioned include one case of pregnancy, ten cases of cholera nostras, several cases of acute dyspepsia from errors in diet, besides others where this symptom occurred during the course of one of the exanthemata.



**A Remedy for Chronic Rheumatic Arthritis.**—Mr. Hugh Lane, in his recent work on Rheumatic Diseases, again emphasizes the value of the old recipe commonly known as the "Chelsea Pensioner." Lord Anson is said to have given three hundred pounds for the liberty to make it public.

R Honey, ℥xvi;  
Sulphur, ℥i;  
Cream of tartar, ℥i;  
Rhubarb, ℥iv;  
Gum guaiacum, ℥i;  
Nutmeg, no. i.—Misce.

Sig.—Two tablespoonfuls in a small tumbler of white wine and hot water on going to bed, and the same quantity before rising in the morning; the patient to remain in bed until any perspiration that may be occasioned has subsided.

## NEUROLOGY.

IN CHARGE OF B. SACHS, M.D.,

Professor of Mental and Nervous Diseases in the New York Polyclinic; Neurologist to the Montefiore Home for Chronic Invalids; Consulting Neurologist to the Italian Home of New York City.

**Does Pressure Myelitis ever result from Lateral Curvature?**  
(*New York Medical Record*, May 28, 1892, p. 604.)

Dr. Henry W. Berg calls attention to the possibility of a pressure myelitis resulting from lateral curvature. Examples of this condition are rare, as the flexion of the vertebral column occurs gradually and the cord is able to accommodate itself to the change. He believes that the atrophy and degeneration of bones and muscles, as well as organs (*i.e.*, mammary glands), occurring on either side of the curve are not due to the disuse of the muscles, etc., but to changes in the trophic centres of the cord as a direct result of the lesion which it receives from the lateral and rotatory displacement of the bony canal in which it is lodged. These latter conditions are exceedingly common, and are in all probability due to an affection of the spinal cord of less severity than the case which Dr. Berg puts on record.

Miss X. enjoyed good health, excepting an attack of Bell's palsy at the age of eight, from which she recovered entirely however, until thirteen years old, when her father noticed that the right shoulder was higher than the left, and the left hip was more prominent than the right. A diagnosis of lateral curvature was made, and she was treated accordingly with a specially-constructed brace. In a year or two her condition had grown steadily worse and a change in the apparatus was advised, but was equally without effect. When seen by the writer, at the age of twenty, the following diagnosis was made: Lateral sclerosis of the cord, three years subsequent to lateral curvature of the spine, beginning at the lower dorsal region and passing downward so as to affect the remainder of the cord; within the last year, a new focus of sclerosis in the lateral columns of the cord higher up, about at the level of the lower cervical and upper dorsal enlargement. The absence of sensory disturbances and symptoms of interference with the cerebral centres point to a systematic

sclerosis of the lateral columns of the cord, and not to secondary degeneration of these columns due to cerebral disease.

After an extensive search through the literature of this subject Dr. Berg has found no authority on the pathology of scoliosis that even mentions that the spinal cord has ever been examined in lateral curvature. No authority gives a clinical history of any cases in which disturbances of innervation accompanying lateral curvature are ascribed to pressure on the cord, and only two observers were found to acknowledge that the cord is ever affected in lateral curvature. The writer found that the most advanced forms of degeneration in the muscles of persons affected with lateral curvature, especially when these changes took place on the convex side of the deformity, were accounted for on the theory that they were the result of disuse.

**A Case of Cerebellar Tumor, with Autopsy.** (*Boston Medical and Surgical Journal*, May 26, 1892, p. 528.)

Dr. Morton Prince records a case of this nature with especial reference to the symptomatology. About seven years previous to the development of any symptoms the patient received a severe blow upon the occiput, which rendered him unconscious for several hours and prevented his working for a number of days. There was no history of syphilis. The first causes of complaint were intense headache and difficulty in walking. The headache came on in paroxysms, was very severe, and located "all over the head." He could not stand or walk unattended, without great difficulty. Muscular condition was good. Examination of the eyes revealed nothing pathological. Ataxia became well marked. Vertigo was pronounced. The patellar and elbow reflexes were increased. When he stood with his feet together and eyes closed he would fall to the *right*. The intense headaches were controlled by hydrobromate of caffeine. He became steadily worse, incontinence of the bladder and bowels developed, and he finally died of exhaustion.

At the autopsy a cyst was found in the right lobe of the cerebellum about the size of a hen's egg, filled with pale, limpid serum. It seemed probable that the formation of this cyst was due to a previously existing blood-clot which may or may not have been formed at the time of his injury.

The writer advises making exploratory openings in all cases where the diagnosis is reasonably clear, as such tumors must of themselves prove fatal, and on opening the skull it may be found possible to remove the growth, especially if it is superficial. If an operation had been performed in this case it would probably have been successful.

**Some Points in the Symptomatology of General Paralysis of the Insane.** (*Cincinnati Lancet-Clinic*, June 4, 1892, p. 749.)

Dr. Philip Zenner speaks chiefly of the early symptoms and of the aids to diagnosis at this period. The manifold symptoms which are sometimes



presented may be readily accounted for by the fact that pathological changes may take place in any or all parts of the brain or nervous system. Nevertheless, general paralysis is, essentially, a disease of the anterior part of the brain.

Whatever part syphilis takes in the etiology of the disease, it is probable that some additional cause is always necessary for its production. No doubt the presence of syphilis lessens the resistive power of the person affected. In the majority of cases where there is a history of infection, the nervous disease appears ten years or longer after the primary lesion.

The early recognition of general paralysis is clearly of the highest importance. The writer believes that *ocular symptoms* are of high diagnostic value, as they are frequently found at an early stage of the disease. The most common of these is inequality in the size of the pupils. Very commonly one or both pupils respond to light very sluggishly or not at all. In some cases there may be a condition of *spinal myosis*, in which the pupils are quite small and do not respond to light, but become smaller on convergence of the eyes. In a paper read some years ago, the writer called attention to this symptom in conjunction with loss of the knee-jerk, in helping to a diagnosis of general paralysis.

These physical signs are of importance in connection with suspicious mental symptoms, such as a progressive failure of mental powers,—*i.e.*, of attention, mental concentration, judgment, memory, and will-power, or changes in the affections and emotions. This failure may be accompanied with delusions, most commonly that of grandeur. Partial or incomplete paralyzes may develop, such as paresis of the facial muscles, following tremor of the lips and tongue, or some difficulty with speech may be observed. When these conditions are well pronounced there is no mistaking the diagnosis.

Clinical Notes on Paralysis of the Diaphragm. (*British Medical Journal*, May 28, 1892, p. 1136.)

Dr. C. W. Suckling believes that while this affection is of rare occurrence it is frequently overlooked. He has seen six cases during the last year. Five of these terminated fatally. Three cases occurred after diphtheria. In the latter the paralysis was recognized a day or two before death and every precaution taken, but in each case death occurred quite suddenly.

The early recognition of this condition is of the greatest importance. The prognosis is very grave. Paralysis of the diaphragm as a sequel of diphtheria may possibly be prevented by keeping patients in bed and at rest whenever any signs of paralysis are present.

The *treatment* should consist in plenty of nutritious food together with absolute rest in bed under large doses of iron and strychnine. If weakness of the diaphragm is observed, the patient should be raised in bed with pillows, so that the diaphragm may act more easily. A gentle faradic cur-

rent should be used three or four times a day, and blistering fluid painted over the course of the phrenic nerve in the neck. Stimulants should be given freely.

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## PEDIATRICS.

IN CHARGE OF T. M. ROTCH, M.D.,

Assistant Professor of Diseases of Children, Harvard University; Visiting Physician to the Children's Hospital, Boston.

ASSISTED BY

E. M. BUCKINGHAM, M.D.,

Instructor in Diseases of Children, Harvard University; Visiting Physician to the Children's Hospital, Boston.

**Milk Laboratories.** (Abstract from a paper read May 3, 1892, before the American Pediatric Society in Boston, by Dr. T. M. Rotch.)

In the beginning of his paper Dr. Rotch stated that two important factors are demanded by physicians of the present day in solving the problems of rational medicine.

*First.* Means of saving time.

*Second.* Exact methods of work.

He also stated that he had long felt that the artificial feeding of infants should be reduced to a more exact system, and that in this way an endeavor should be made to rescue this important branch of pediatrics from the pretensions of proprietary foods and the hands of ignorant nurses. With this purpose in view the writer has established a laboratory where the materials used are clean, sterile, and exact in their percentages, and can be combined in any proportions which the physician may wish to prescribe. Laboratories of this kind should be established everywhere, and physicians should write prescriptions for their infant patients' food, and put them in the hands of the milk modifier in his laboratory, just as they write for combinations of drugs in disease and intrust them to the pharmacist in his drug-shop. The writer then gave, as the result of his clinical experience in infant feeding, the conclusion that slight changes in the percentages of the three elements of milk of which we have most accurate knowledge—namely, the fat, sugar, and albuminoids—are of real, practical value in managing the digestion and nutrition of the infant.

To prove this, he presented the analyses of seven human milks, picked out from a large number of similar analyses occurring in his practice and illustrating this principle.

In these analyses the fat, sugar, and albuminoids varied to a marked degree, and yet the infants all digested well and thrived on their individual percentages, while what agreed with one produced at times serious symptoms in another.

He therefore considered that, so far as milk is counted upon as a food,



it should be understood to be a general name of food for the infant, just as dinner is a general name of food for the adult; also that this general dinner (milk) of the infant should be modified in its various parts to suit the digestion of the individual infant.

Dr. Rotch then remarked that perhaps it would be of interest to the society to know what materials were needed and what processes were gone through with in carrying out the prescription of the physician. He also stated that such a laboratory as he was about to describe had already been established in Boston and was in successful operation, a number of physicians having found it to be an indispensable adjunct to their daily practice.

The writer then described the careful supervision of a herd of cows especially selected as to breed and systematically fed, so that the analysis of their milk should be of an almost unvarying percentage. The morning milk of these cows, milked into glass and kept scrupulously clean, is rapidly cooled and in a few hours delivered at the laboratory. The atmosphere of the laboratory is kept pure and fresh by means of a large fan, which keeps up a constant outward current of air. The laboratory itself is lined with white tiles, and contains a separator by means of which a stable, sixteen per cent. cream can be quickly obtained from the milk.

There is also a large sterilizer, into which not only steam can be introduced but in which the milk can be exposed to high or low temperatures, at the will of the modifier.

Dr. Rotch then explained that, having once obtained a pure, clean skimmed milk and cream of a stable percentage, it was merely a matter of mathematical calculation to combine these fluids in such proportions as to produce a mixture with the percentages of fat and albuminoids prescribed by the physician.

The sugar percentage was obtained in like manner by using a carefully-prepared, twenty-per-cent. solution of milk sugar and distilled water.

Diagrams were then shown illustrating the prescriptions written by the physicians in fat, sugar, and albuminoid percentages, the same prescriptions translated into drachms and ounces by the milk modifier, and the figures returned by the chemist, to whom the modified milk was sent, to test the accuracy of the modifier's calculations.

Dr. Rotch had had a large number of these test-analyses made, so that there no longer remained a doubt that fairly exact combinations could be made in this way.

Dr. Rotch then drew the attention of the society to the fact that, as the chemistry of the mineral matter in woman's milk was so little known, it was better to ignore for the present that element, and that simply three figures need be remembered corresponding to the percentages of fat, sugar, and albuminoids in average human milk, namely, 4, 7, and 1.50. Starting with these figures, the physician could then easily change one or more of them either to increase or decrease according to the need of the especial infant.

Dr. Rotch then stated that objections had been made to sterilizing at 212° F., and he had found that by keeping the temperature at 167° F., as could easily be done in the laboratory sterilizer, as good results were obtained as when the temperature was raised to 212° F.

In support of this view he presented the bacteriological experiments of Professor Ernst and Dr. Jackson on the laboratory milk.

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## SURGERY.

IN CHARGE OF B. FARQUHAR CURTIS, M.D.,  
Surgeon to St. Luke's Hospital and to the New York Cancer Hospital.

**Actinomycosis.** (Ein Beitrag zu der Lehre von der Aktinomykose. *Archiv für klin. Chirurgie*, xliii., 1892, Heft ii., p. 257.) By Dr. E. O. Samter.

Actinomycosis is a much more prevalent disease than has been supposed, and probably will be found in this country more frequently when its features are better known, especially in cattle-dealing districts. This paper of Samter is, therefore, of interest. He reports and analyzes nineteen cases,—seven of the head and neck, four of the chest, and eight of the abdomen. The first group includes cases of abscesses and fistulæ of the neck or involving the jaws, or (in two cases) tumors of the tongue. In connection with the jaws, the appearances and history resembled necrosis; but in one case no diseased bone could be detected, although the process had existed for a long time close to it, and this fact has also been noted by other observers. In the tongue distinct tumors were found,—one ulcerated, the other not,—and were cured by free extirpation, as if for neoplasms, which, indeed, they resembled. One case of abscess of the neck recovered after simple incision, probably because the suppuration had been so complete as to destroy the bacterium. The teeth are supposed to be the most frequent entering-gate for the infection; but in some of these cases the teeth were sound, but a gingivitis existed, and the bacteria were found between the gums and the teeth in three cases. Leptothrictic threads may grow so as closely to resemble the actinomyces, but they never present all of their characteristics at once,—the radial arrangement of the fibres, their dichotomy, the complete ring of the rays, and the formation of the kernel. Fistulæ in the gum when the teeth are sound are likely to be due to actinomyces. When the operation is performed the teeth should be removed if carious, and the space between the teeth and gums carefully disinfected.

In the chest, the process may be in the lungs or in the tissues in front of the spine. It may resemble empyema, pulmonary abscess, and tuberculous osteitis of the ribs and vertebræ. The bacteria may be found in the sputum. Surgical treatment offers little for this form of the disease. In the abdomen, treatment is hopeful. The disease here is generally taken for



perinephritis, parametritis, perityphlitis, or tumors of the abdomen or its wall. Mikulicz advocates, in case of deep-seated abscesses, performing a laparotomy and tamponing with gauze down to the wall of the abscess, and then opening the latter at a later date, when adhesions have shut off the general cavity. The process generally runs its course in the loose subperitoneal cellular tissue. Four of Samter's eight cases started from the large intestine. The abscesses are generally bilateral tumors, rather symmetrical, with a tendency to point on both sides of the middle line, and usually in the hypogastrium, or (in a few cases) in the loin. Their appearance often dates from an injury.

**Cysts of the Mesentery.** (Zur Semiotik und Therapie mesenterialer Cysten. *Deutsche Zeitschr. für Chirurgie*, 1892, xxxiii. 129.) By A. Frentzel.

Frentzel reports a case operated upon by Lücke with success, by incision and drainage. Of the thirty cases collected by Augagneur, he accepts only nine as positive in diagnosis. The cysts form about one-third of the tumors of the mesentery. Diagnostic peculiarities are; their first appearance in the region of the umbilicus, their free mobility in the abdomen, their intermittent growth, and the paroxysmal pains induced by them. But sometimes they are painless. An excellent table is given of the differential diagnosis. As to treatment, the chief stress must be laid on the necessity of avoiding injury to the mesentery itself. Sometimes the cyst can be enucleated from the mesentery, and when possible this should be done. If the adhesions are too firm, as much of the cyst as has been enucleated should be cut away and the rest drained. If it is evident from the first that extirpation will be impossible, the cyst wall is to be secured to the lips of the abdominal wound and incised after adhesions have shut off the general peritoneal cavity.

**Successful Suture of a Wound in the Vena Cava.** (Einige Bemerkungen über die Naht von Venenwunden, nebst Mittheilung eines Falles von geheilter Naht der Vena cava inferior. *Archiv für klin. Chirurgie*, xliii., 1892, Hefte iii. and iv., p. 338.) By Dr. Max Schede.

Schede prefers suture of lateral wounds in veins to any other method of treatment, and has had universal success in a large number of cases. He uses a fine needle and fine catgut with a continuous suture. He reports a case in which the renal vein had to be removed close up to the cava in a nephrectomy, in which he closed the wound in the cava by suture, and the patient recovered.

**Hernia of the Cæcum.** (Die Lageverhältnisse des Cöcum und ihre Beziehung zur Entstehung von äusseren Cöcalbrüchen. *Deutsche Zeitschr. für Chirurgie*, xxxiii., 1892, p. 182.)

Hildebrand gives an elaborate view of the present knowledge of the

anatomy of the cæcum in its relations to hernia. He has collected one hundred and twenty-eight cases of hernia of the cæcum : eighty were right inguinal, eighteen left, six side unknown ; eleven cases were right femoral, none left. There were eleven umbilical herniæ, nineteen ventral, and one sciatic. He doubts the one case in which it is said that the cæcum lay in the external sac without any peritoneal investment, but thinks it by no means impossible that the cæcum should lie outside of the peritoneal hernial sac. The absence of left femoral hernia from the collection cannot be explained very readily. In any case the cæcum is abnormal in position, either by original formation, or by changes induced by adhesions with other parts, or by traction exerted by the testicle or in some other way, when it appears in a hernial sac.

**The Treatment of Heart-Failure from Chloroform.** (Die Methode der Wiederbelebung bei Herztod nach Chloroformeinathmung. *Berliner klin. Wochenschr.*, 1892, p. 265.)

Maass describes a method in use in the clinic at Göttingen by which the heart can be made to resume its action after apparently fatal paralysis from chloroform. The method consists in rapid impulses given to the region of the heart by the hand of the surgeon. The latter stands on the patient's left side and lays his right hand on the left side of the chest, so that the ball of the thumb lies half-way between the apex-beat and the sternum, while his left hand applied to the right side of the chest steadies it, and then makes rapid compressing motions with the right hand, as many as one hundred and twenty to the minute. Maass relates two cases in which the patients were revived by this method perseveringly applied for half an hour or more, although they were apparently hopelessly lost, for whenever the compression was interrupted the heart-contractions ceased. The respiration, however, continued spontaneously, although very shallow in character.

**Osteoplastic Sequestrotomy.** (Osteoplastische Nekrotomie, etc. *Archiv für klin. Chirurgie*, xliii., Hefte iii. and iv., p. 121.) By Dr. A. Bier.

Bier describes a modification of the ordinary operation of sequestrotomy as employed at Esmarch's clinic. The method consists in exposing the cavity containing the sequestrum by lifting up a flap of skin and bone, which is marked out on three sides by incisions made through the skin and deepened into the bone,—by the saw, above and below the cavity, and by the chisel on the side parallel with the long diameter of the bone. The flap is pried up, breaking the bony attachments on the other long side, and thrown back on the periosteum and soft parts as a hinge. After removing sequestra and cleansing the cavity, the flap is restored like the lid of a box, and the cavity left to obliterate itself. As some cases in which attempts at blood-clot healing and decalcified bone implantation did not do well, no special treatment was adopted in the other cases, and it is said that they recovered



“with moderate suppuration” and in a shorter time than when the wound was left open to granulate in the old way. The operation is recommended only for subcutaneous bones like the tibia and ulna.

**Tuberculous Osteomyelitis of the Shafts of the Long Bones.** (Ueber Tuberculose der Diaphysen der langen Röhrenknochen. *Archiv für klin. Chirurgie*, xliii., Hefte iii. and iv., p. 156.) By Dr. P. Reichel.

Although much less common than epiphyseal tuberculous disease, tuberculosis does attack the diaphyses of the long bones, and, according to Dr. P. Reichel, it is particularly common in Würzburg. The disease was generally observed in this form in patients who had the ordinary form of tuberculous disease in one or more other bones. It may occur secondarily to disease of a joint or a neighboring epiphysis, or as an independent affection. It occasionally is sufficiently acute in its symptoms and course to closely resemble the purulent form of osteomyelitis. Pathologically, it shows itself in masses of granulation-tissue, with or without sequestra, or as a progressive infiltrating caseation of the bone. The treatment is the same as with tuberculous bone-disease elsewhere, but the acute form requires very prompt and thorough operative measures—as much so as the septic osteomyelitis.

**The Treatment of Cicatricial Stricture of the Rectum.** (Die Behandlung der narbige Mastdarmverengerungen. *Archiv für klin. Chirurgie*, xliii., Hefte iii. and iv., p. 175.) By Professor Credé.

Credé ascribes the poor results of the ordinary dilatation treatment of stricture of the rectum to the short time given to stretching the stricture at each introduction of the bougie, and the pain caused, which disheartens most patients. He has had far better success since he has employed a bougie shaped like the old model of Hegar's uterine dilators. These instruments are easily introduced by the patient himself, and can be retained without discomfort for half an hour, or even over an hour, some patients even going about with the bougie in place. They are shaped somewhat like a banana, with a small handle to project through the sphincter.

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## GENITO-URINARY SURGERY.

IN CHARGE OF WILLIAM K. OTIS, M.D.,

New York.

**Double Chancre à Distance: An Inquiry into Syphilitic Auto-Inoculation.** (*St. Louis Clinique*, May, 1892.) By A. H. Ohmann-Dumesnil, M.D.

In this article the question of auto-inoculation of syphilis is concisely and logically discussed, and, in addition to two cases presented by the author, a careful *résumé* of all the recent writings upon this subject is made. The following conclusions are arrived at:

1. The probability of auto-inoculation in early syphilis has not been proved.

2. While there may be strong presumptive evidence in favor of it, it is only at best a possibility.

3. The most crucial experiments prove that excision of the chancre at the earliest possible moment is futile, and falls short of its purpose.

4. In multiple chancres *à distance* the lesions are due to the same inoculation, as a rule.

5. In multiple chancres of different ages it is probable that the younger are merely irritative scleroses.

6. Experiments so far apparently prove that syphilis is constitutional at the time the initial sclerosis makes its appearance.

[In regard to this last conclusion (6), I would differ from the author,—believing that while the most crucial experiments prove that excision of the chancre at the earliest possible moment is futile, that almost immediately after the inoculation the disease is beyond the reach of knife or caustic, at the same time there are reasons to think that during this so-called primary stage the disease is confined to the lymphatics, and does not become general until the infectious material is poured forth through the thoracic duct into the general current of the blood, which period is marked by the appearance of the roseola. In substantiation of this I have known of several accidental inoculations with the blood of syphilitics in the first stage, which were followed by no infection.—W. K. O.]

The Mimicries of Primary Urinary Tuberculosis. (*British Medical Journal*, May 28, 1892.) By E. Hurry Fenwick, F.R.C.S.

The difficulty of making an early diagnosis in primary affections of the genito-urinary apparatus is well known, and at the same time is exceedingly important, owing to the fact that a mistake in diagnosis usually leads to a form of treatment harmful to the patient. The author endeavors to show from the observation of over one hundred cases the forms of genito-urinary tuberculosis most often confounded with simpler processes, and also the points of difference.

1. In primary renal tuberculosis the differential diagnosis is made by the family history of the patient; the appearance of pus in the urine very soon after, if not coincidently with the renal pain; and in the powerlessness of absolute rest to affect or subdue the symptoms.

2. *Renal Tuberculosis simulating Cystitis*.—Polyuria may not always be present, but when it is, the frequency of quantity soon gives place to the frequency of irritability. Less is passed at a time and more often. This vesical irritability is due to the acrid state of the tuberculous urine, which causes swelling and excoriation (?) of the mucous membrane of the trigone and prostatic urethra. The swelling and congestion are very obvious with the cystoscope.

3. *Primary Vesical Tuberculosis simulating Vesical Calculus*.—The efflo-



rescence of the first patch of primary vesical tubercle, or the first appearance of the track of the invading ureteric or prostatic contagion, can be readily and distinctly seen with the electro-cystoscope. Primary vesical deposits usually appear first upon the posterior wall. Ureteric invasion shows itself first at the ureteral orifice and along the corresponding limb of the trigone. Prostatic deposit creeps in at the urethral opening and spreads itself out uniformly in the trigonal submucous layer.

4. *Obsolete Vesical Tubercle simulating the Contracted Bladder of Concentric Hypertrophy.*—It is of importance to remember that vesical tuberculosis becomes obsolete by burning itself out. The mucous membrane is more or less completely destroyed and sloughs away. An inelastic, stiff-walled, little reservoir of the capacity of three ounces remains. The patient is free from any pain. His stream is forcible but thin, and of short duration; the urine is clear, but he is worried by the frequency of incapacity, being only able to retain a wineglassful at a time. Every half hour by day and night the urine is passed, and he clamors for some relief from the distressing frequency, the annoyance of the urinal, and the chafing of the abraded, urine-sodden genitals. Surgical interference is without value in these cases.

5. *Primary Tuberculous Prostatitis simulating Gonorrhœal Infection of the Onanitic Prostate.*—The majority of cases of primary prostatic tuberculosis are recognizable *per rectum* by the discovery that one or both lobes are occupied by one or more hard nodules, which vary from small shot to a horse-bean in size. Moreover, the persistency of the irritability of the bladder, the unrelieved pain in the perineum and glans penis after micturition, the occasional appearance of blood at the end or at the commencement of the stream, the agony of instrumentation, together with the presence of pus and *débris* in the urine, will be enough to guide you after the rectal examination to a correct solution as to the nature of the trouble. Sometimes, however, when the deposit is buried in a general swelling of the prostate, it is impossible to make the diagnosis, except, perhaps, by using a weak solution of tuberculin. All instrumentation should be avoided in these cases.

6. *Primary Urethral Tuberculosis simulating Stricture.*—This is an exceedingly rare affection. Tuberculosis should afford, however, a better prognosis here than in any other part of the tract, for the constant passage of urine over the surface sweeps away the irritating secretions. All manipulation is out of the question, but much good may be done by iodoform urethral bougies gently insinuated into the deep urethra, the general health being at the same time well supported.

## ORTHOPÆDICS.

IN CHARGE OF REGINALD H. SAYRE, M.D.,

Assistant to the Chair of Orthopædic Surgery, Bellevue Hospital Medical College, New York.

Laminectomy in a Case of Paraplegia from Compression of the Spinal Cord. (*Annales d'Orthopédie*, March 15, 1892.)

Mr. Davies-Colly reports a case of paraplegia occurring in a woman twenty-three years old, who had had a fall some years previously. After the fall she had pains in the back and chest which prevented her from working. These pains finally disappeared, and she resumed work. Two months before entering Guy's Hospital the pains returned, accompanied by weakness of the lower extremities and anæsthesia, with slight incontinence of urine and fæces. A tumor of some prominence could be felt in the region of the fourth, fifth, and sixth dorsal vertebræ.

As the patient failed to improve after three weeks' rest in bed, Mr. Davies-Colly operated, and found the tumor to be a fibro-sarcoma arising from the right lamina of the fourth dorsal vertebra. It was removed together with the lamina and spina of the fifth and sixth vertebræ. The cord was softened but the dura seemed sound. Paralysis and anæsthesia disappeared completely at the end of six weeks, and the patient was in good health. The author speaks of the difficulty of diagnosis, as the case presented more the symptoms of ordinary curvature of the spine than of a neoplasm.

The Cure of Recurrent Luxation of the Shoulder by Periarticular Injections of Chloride of Zinc. (*De la Cure des Luxations récidivantes de l'Épaule par les Injections périarticulaires de Chlorure de Zinc. Annales*, March 15, 1892.) By Dr. Dubrueil.

The author had a case of luxation of the shoulder in which the accident was repeated five times in a month and a half. After the fifth luxation the shoulder was in such a condition that it slipped out at the least exertion, and the man was prevented from doing any kind of work. The luxations were subcoracoid. Dr. Dubrueil determined to try the sclerogenic effect of injections of chloride of zinc in thickening, tightening, and fortifying the capsular ligament. He made six injections, of two drops each, of a ten-per-cent. solution of chloride of zinc at different points along the anterior superior part of the shoulder below the acromion, placing the liquid in contact with the capsule. These injections occupied eleven days. But slight pain and no reaction ensued. After the sixth injection the patient was told to work at anything he could in the hospital, to see if the shoulder would stay in place, and two weeks later, when he left the hospital, he seemed to be cured, being able to perform movements of abduction, circumduction, and rotation without difficulty, and only accompanied by some crackling of the joint.



The Treatment of Tuberculosis by Injections of Chloride of Zinc Solution. (Technique de la Méthode Sclérogène, par M. Lannelongue. *Annales d'Orthopédie*, May 1, 1892.)

At the Annual Congress of Surgery, held in Paris this year, Lannelongue demonstrated his sclerogenic method for the treatment of tuberculosis. The principle of the method is to operate on the band of sound tissue nearest to the fungous growths and tubercular neoplasms,—that is to say, on the one which contains the vessels which feed the tubercular tissues. It is easy in the majority of joints, and possible in almost all, to form a new sclerotic area which, after having isolated the fungous masses as by a fatty border, will substitute itself for the pathological tissue, and transform the synovial membrane into true fibromata. To effect this we must carry the irritant to the borders of the fungosities, and there deposit the desired amount in a certain number of points of contact. Thanks to its diffusible properties and its obliterating action on the blood-vessels, these effects are not slow in showing themselves well outside the point of their application. New embryonic elements, drawn hither by the inflammatory reaction, infiltrate the injected tissue and the tubercular neoplasm in incalculable numbers, and gradually become organized into fibrous tissues.

The local tolerance of the tissues is remarkable, even of considerable doses of strong solutions. You can, without danger, inject forty drops of a ten-per-cent. solution of chloride of zinc in water around a joint, provided that it be deposited deeply in the tissues under the aponeuroses. Lannelongue has never observed any eschars. On the contrary, however, eschars are produced if the solution is injected under the skin.

Lannelongue usually employs a ten-per-cent. solution, and injects three drops at a time, making a new skin puncture for each point of injection.

He tries, as far as possible, to transform the whole synovial sac into a fibrous mass at one sitting, and in children can nearly always obtain this result. He injects from thirty to forty drops of a ten-per-cent. solution around the synovial fungus of the knee of a child eight to twelve years old, increasing the dose for adults. When one injection does not suffice, a second is tried in about three weeks, which length of time is necessary to see whether or not the first has been effective.

The different parts of a joint capsule are quite separate as regards their blood-supply, receiving it chiefly from the vessels which are placed at the points where the synovial sac is reflected from the skeleton, and these points are to be selected for the injections which are to be made into the periosteum at the points where the synovial membrane joins the bone.

Immobilization and compression of the joint are essential adjuvants to treatment. These are kept up until the sclerosis is really established, and the limb can be left to itself, and movements of the joint may be commenced. This period may roughly be put as the middle of the second month of treatment.

In children anæsthesia is necessary for the operation. In adults it may be omitted,—a hypodermic injection of morphine taking its place.

If the case is complicated by abscesses and fistulas, in addition to osseous lesions, these are operated on by gouging and scraping, etc., about two weeks after the injection.

He gives the results in a number of cases in which about a year had elapsed since treatment. These were divided into three classes: (*a*) cases not suppurating and not discharging; (*b*) cases suppurating but not discharging; (*c*) cases suppurating and discharging. In the knee there were of *a* six cases, five rapid cures with perfect motion: one case, cure retarded by necessity of scraping internal condyle of tibia on its articular surface; *b* two cases, rapid cure, with perfect motion. Ankle: *a*, one case, rapid cure, perfect motion; *b*, two cases, scraping of bone, extirpation of foci,—cure; *c*, two cases, one case, scraping, one case extirpation of astragalus, excision of tibia, a case suitable for amputation, but nevertheless cured in ten months. Elbow: *a*, one case, cure, flexion and extension almost complete, pronation and supination diminished one-third; *b*, one case, cure, with scraping humerus. Wrist: *b*, one case, opening abscess, scraping,—cure, movements well preserved. Spina ventosa: *b*, one case, cure with opening of abscess; *c*, one case, cure with extraction of bone; two costal osteitis, class *a*, cured.

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## OBSTETRICS AND GYNÆCOLOGY.

IN CHARGE OF J. M. KEATING, M.D.,

Colorado Springs, Colorado; Fellow of College of Physicians of Philadelphia; Formerly Consulting Physician for the Diseases of Women, St. Agnes's Hospital, Philadelphia; Consulting Surgeon to the Maternity Hospital; Gynæcologist to St. Joseph's Hospital; Visiting Obstetrician to the Philadelphia Hospital (Blockley), and Lecturer on the Diseases of Women and Children; Editor "Cyclopædia of the Diseases of Children," etc.

**Vaginal Secretions.** (*American Gynæcological Journal*, May, 1892.)—Dr. J. Whitridge Williams, of Baltimore, gives a *résumé* of Doëderlein's (of Leipsic) excellent work on vaginal secretion.

In young girls, virgins, unaffected by disease, he found the normal vaginal secretion to be a small quantity of whitish, crumbling material, of the consistency and appearance of curdled milk; containing no mucus and giving an intensely acid reaction to litmus paper. Microscopically it consists of vaginal epithelial cells and a large quantity of large bacilli.

The pathological secretion he found to be yellowish or greenish-yellow in color, and of cream-like consistency, and often containing gas bubbles or particles of mucus; its reaction was weakly acid or neutral and sometimes alkaline; microscopically it consists of epithelial cells, many pus-cells, and a mixture of all kinds of micro-organisms.

The secretions from one hundred and ninety-five pregnant women were examined, and fifty-five and three-tenths per cent. had normal and forty-four



and six-tenths per cent. had pathological secretion. Of these the primiparæ showed the largest percentage of normal secretion, namely, sixty-five and seven-tenths, whereas the multiparæ had only a percentage of thirty-eight and six-tenths, and in private practice the normal secretion exceeded the pathological.

The bacillus was found only in the normal secretion, and can be cultivated only upon sugar bouillon and agar-agar.

It produces an acid thought to be lactic acid and with great rapidity, and to this the normal acidity of the vaginal secretion is due. The products of the life of this bacillus appear to be fatal to most of the pathogenic organisms. Pus introduced in large quantities producing organisms in four days had entirely disappeared. This bacillus was proved to be non-pathogenic and therefore could not produce sepsis.

The pathological secretion possesses marked pathogenic properties, as proved by inoculating eighteen rabbits. In eight out of eighty-seven cases streptococci were found. As the streptococcus is usually the cause of puerperal fever, we may conclude that even in the pathological cases only in ten per cent. is auto-infection probable.

Doederlein does not consider that the streptococci are able of themselves to invade the uterus and produce infection, and he believes that even if they are present in the secretion they need to be carried there by some manipulation or other. When found, and in the lying-in hospitals of Leipsic a routine of examination by microscope is required, no examination or vaginal injection is permitted.

In cases where pathological secretion is found, he uses a *one-per-cent.* solution of lactic acid, which favored the growth of the vaginal bacillus.

**Preparation of Catgut.** (*Archives of Gynæcology, etc.*, April, 1892.) By William Goodell, M.D.—The unprepared gut comes in greasy coils of a dark amber color. To dissolve out the fat they are placed in commercial ether for from twenty-four to forty-eight hours, according to the size of the gut, and if the gut is of the larger sizes the ether is changed once. The gut is now immersed for forty-eight hours in a one-one-thousandth alcoholic solution of corrosive sublimate. It is then wound on glass spools by surgically clean hands, and kept permanently for use in a mixture of two parts of oil of juniper to one of alcohol, which is occasionally changed. When needed for an operation, a requisite number of spools are transferred to a mixture of *one* part of glycerin, which has been sterilized by heat, to *nine* of alcohol.

**Injuries of the Perineum.** (“Sammlung klinischer Vorträge,” notice in the *Berliner klin. Wochenschr.*, May 2, 1892.)—Küstner, in his investigations concerning the origin of the injuries of the perineum, agrees with Freund that the columna rugarum posterior remains uninjured, and calls attention to the fact that (likewise on the exterior of the perineum) an

unfavorable condition is brought about by the contraction of the cicatrix on account of the lateral position of the rupture. If the vagina is ruptured on one side only, the columna is drawn off unevenly; if on both sides, the heavy columna sinks forward, and heals too far down on the perineum. Küssner warmly urges that the incision of the perineum during the birth of the head should be in the centre, and not on the side. In his suggestions regarding the technique of perineoplastic, he proposes cutting the scar wherever it is linear, and freshening up the granulating surface freely, where necessary.

The portions of the posterior wall of the vagina which have slipped down he dissects carefully from their attachments, fastens them back in the vagina, and unites the perineum transversely beneath them.

**Gonorrhœal Cystitis.** (*Archives of Gynæcology, etc.*, April, 1892.)—Dr. Mesnil (*Virchow's Archiv*) denies the existence of a specific gonorrhœal cystitis. In women pus from the urethra and vagina can easily get into the bladder, but the urine renders the gonococci harmless or kills them entirely.

**Massage and Gymnastics in the Brandt Treatment.** (*Deutsche med. Wochenschr.*, May 5, 1892.)—Dr. Emil Ries, assistant in the gynecological clinic of the University of Strasburg, publishes the results of certain experiments relative to the Brandt massage treatment. By careful thermometrical examinations in the vagina, he concludes that all the gymnastic exercises, such as are supposed to convey the blood to the affected organs, as well as those supposed to have a contrary effect, result in lowering the temperature. This he attributes to the increased radiation of heat from the surface of the body. He concludes that the beneficial influence of the gymnastics is mainly of a general nature, and that the massage and gymnastics may without detriment be performed at different hours.

**The Bacillus Lanceolatus in Pyosalpinx.** (*Deutsche med. Wochen.*, May 19, 1892.)—Dr. Witte reports a case of pyosalpinx operated upon in the private clinic of Dr. A. Martin in Berlin, in which a bacteriological examination revealed the presence in large numbers of the *bacillus lanceolatus* Fraenkel (pneumococcus), in addition to a few staphylococci. Although pneumococci have been shown to be the cause of suppuration in various portions of the body, this is only the third case reported as yet in which they have been found in the pus of pyosalpinx.

**Vaginal Hysterectomy in Affections of the Annexes.** (*Semaine Médicale*, May 4, 1892.)—At the meeting of the Surgical Society of Paris April 27, 1892, Dr. Quénu reported a case operated on by him for pyosalpinx, according to the method of Müller for vaginal hysterectomy, by median section. He was able to open the abscesses, one of which contained a litre of fluid on the side, the patient losing hardly a drop of



blood. Patient was doing well, although the case had been such a desperate one that laparotomy was out of the question. Dr. Segond and Dr. Routier agree with Dr. Quénu in commending the method for suitable cases.

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## OPHTHALMOLOGY AND OTOTOLOGY.

IN CHARGE OF J. E. HARPER, A.M., M.D.,  
Chicago, Illinois.

**Aural Polypi.**—In a lecture on aural polypi (*London Lancet*, May 28, 1892), A. Marmaduke Shield, M.B., F.R.C.S., ascribes their origin to the irritation resulting from a focus of necrosis, the orifice of a sinus, or the flow of a foul and irritating pus. The majority grow from the tympanic cavity, but they may grow from the walls of the auditory canal. They are composed of simple granulation tissue covered with epithelium. It is difficult to distinguish, with the microscope, between embryonic granulation tissue and rapidly-growing sarcoma. This has given rise to mistakes when polypi have recurred after removal; the fact that recurrence of the growth was dependent upon the persistence of the local conditions that originated it was lost sight of. Polypi must be looked upon as a symptom of a local disease. Weeks and sometimes months of treatment must be carried out after operation, and the patient must, all his life, carry out the local and hygienic measures so important in perforative otitis. Treatment of these cases involves risk, as the parts have so long been bathed in virulent septic fluids that general pyemic infection may follow opening up small venous trunks. In intra-tympanic operations on the bone after removal of polypi he confines his operations to the removal of loose, easily detached sequestra. All operations are made with antiseptic precautions.

**Signification of the Odor of the Discharge in the Treatment of Chronic Suppurative Otitis.**—Dr. H. Gradle (*Archives of Otolaryngology*, April, 1892) bases the following conclusions in regard to the significance of the odor of the discharge of suppurative otitis on the observation of six hundred cases :

As long as the pus of the otorrhœa smells fetid, the treatment employed has exerted no curative influence on the disease, and conversely ;

The first sign of the curative influence of any treatment upon the course of the otorrhœa is its effect upon the odor of the discharge.

**Removal of a Mass of Lead from the Ear.** (*London Lancet*, April, 1892.)—A. Marmaduke Shield, M.B., F.R.C.S., reports the case of a plumber who, while carrying a pot of molten lead, fell down a ship's ladder. The lead splashed over the side of his head, burning it severely, and some of it ran down into the right ear. Five weeks later he came

under the care of the writer, who found an offensive discharge, ozæna, and total deafness on the right side. The tuning-fork was heard over the mastoid, and the facial nerve was not affected. A mass of metallic lead could be seen. It had burned through and destroyed the drumhead and filled the tympanic cavity, the surface of the lead being just flush with the remains of the membrane. The mass had moulded itself to the inequalities of the cavity. All efforts to remove it with instruments proved futile. Metallic mercury was poured into the ear and retained as long as possible. After an aggregate of sixteen hours' maceration, the mercury so amalgamated the lead as to reduce its size and destroy the projections on its surface sufficiently to allow it to be washed out by means of a jet of water thrown from a powerful syringe.

**Primary Epithelioma of the Auricle.** (*Lancet-Clinic*, May 21, 1892.)—Dr. C. S. Ayres reports the removal of a primary epithelioma from the auricle of an Italian of thirty-five. The growth was located on the upper and posterior part of the auricle, originated in the skin, and involved the free edge of the cartilage.

**A Case of Buphthalmos.** (*Times and Register*, April 2, 1892.)—Dr. Herbert Harlan reports a case of congenital buphthalmos. The patient was a girl, eleven years old; both eyes were affected, but one was larger than the other. The condition was noticed at birth, and gradually grew worse. Sight was never good. Opacity of the cornea developed in one eye; there was severe pain and inflammation lasting six months and followed by total loss of light-perception. The other eye has been somewhat painful, and has enlarged to nearly the size of a bullock's eye. Tension was normal; cornea of usual thickness; iris a little thin and stretched about outer margin. But for the high degree of myopia and the enormous size the eye was apparently perfect.

**Ocular Disease from Malaria.**—Dr. Bagot (*Annals d'Oculistique*) describes three cases of pernicious malaria followed by ocular trouble. In two cases soft cataract developed in both eyes and were relieved by operation. In the remaining case the patient, a child, after recovery from the fever had erythropsia, red vision, followed by total loss of sight at the end of five days. Ophthalmoscopic examination showed hemorrhagic spots near the macula of one eye. Papillary atrophy was present at the end of a year. Slight improvement subsequently occurred in the left eye.

**Direct Trituration to hasten Maturity of Cataract.**—Dr. Boerne Bettman (*Chicago Medical Recorder*, April, 1892) describes his operation for hastening the ripening of cataract by direct trituration. He makes a preliminary iridectomy or a paracentesis corneæ, rotates the eye downward, holds it with fixation forceps, introduces the ordinary spatula used in



replacing a prolapsed iris, places the blunt end of the instrument in contact with the lens, and makes gentle but firm to-and-fro motion over its surface. The end is slid under the edge of the iris and massage or trituration made over the greater portion of the lens surface. From half a dozen to ten strokes are made. The spatula is then removed, the eye washed with an antiseptic solution, atropine is instilled, and a bandage applied. The author has used this method in seventeen cases, in all but two of which he made an iridectomy. The results have been uniformly satisfactory, and no complications developed.

**Spindle-Cellled Sarcoma of the Eyeball following Trauma.** (*Canadian Practitioner*.)—Dr. G. A. Reeve describes a case of this kind. On examination one month after injury (May 20, 1870) a detachment of the retina in the equatorial region was noted. In one week glaucoma set up. Two iridectomies failed to relieve; the eye being blind, enucleation was performed. A tumor eight by ten millimetres in size, grayish and rather firm, was found on the sclera in the equatorial region. It occupied about one-sixth of the vitreous chamber. Microscopic examination showed it to be a spindle-celled sarcoma, with slight pigmentation towards the border.

**Operative Treatment to induce Quick Healing of Dacryocystitis.**—Guaita (*Centralblatt für Praktische Augenheilkunde*, January, 1892) describes an operation for the cure of dacryocystitis which he has used three hundred and fourteen times with good results. He cures the lachrymal sac and introduces a decalcified bone canula into the lachrymal canal, which has been previously widened by an incision. Great care is necessary to prevent the canula folding on itself and to introduce it into the canal. The operation is made under strict antiseptic precautions.

**The Surgical Treatment of Granular Lids.**—In the *Archiv der Ophthalmologie*, February, 1892, Darier, chief of Abadie's clinic, describes the treatment of granular lids practised in that service. A general anæsthetic is used, the lids are completely everted by means of special forceps, and if necessary an incision is made in the outer canthus to secure this. The granulations are thoroughly scarified with a grattage-knife, then by means of a scraper and a short stiff brush all the morbid tissue is effectually scraped and brushed away, after which the surfaces are carefully cleansed with cotton, moistened with a one-five-hundredth sublimate solution. Iced compresses are applied, and the eye is frequently washed with a one-two-thousandth sublimate solution.

**Syphilitic Irido-Choroiditis treated with Subconjunctival Injections of Bichloride of Mercury Solution.**—In the *Recueil d'Ophthalmologie*, January, 1892, Dr. Lagrange reports a case of syphilitic irido-choroiditis treated by injections of a one-one-thousandth sublimate solution beneath

the bulbar conjunctiva into Tenon's capsule. Three injections were made at intervals of eight days. Eight to twelve drops being given at a time. Vision improved from  $\frac{1}{7}$  to  $\frac{1}{3}$ , and the opacity of the media improved. Mercurial inunctions and potassium iodide internally had not influenced the disease.

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## DISEASES OF THE LARYNX, NOSE, AND SURROUNDING STRUCTURES.

IN CHARGE OF J. PAYSON CLARK, M.D.,

Physician to the Throat Department of the Boston Dispensary; Assistant Physician for Diseases of the Throat, Massachusetts General Hospital.

**The Tumors of the Base of the Tongue.** (*Deutsche Med. Wochenschr.*, March 31 and April 7, 1892.)—In an article on this subject, A. Rosenberg enumerates the following growths: Polypi or hypertrophy of the lymphatic tissues, caused by irritating conditions or by some general disease, as scrofulosis, occur at the base of the tongue. Cysts arise from congenital remains of the bronchial clefts and from retention. Papillomata are very rare; fibromata, as elsewhere on the tongue, are rare in this region: they may be of the simple or the mixed variety. Fibroma is harder than the surrounding tissue and of a different color. Of chondroma there is only one case in literature, and osteoma in this region is unknown; adenoma has occasionally been described: it is generally submucous, and has a somewhat similar appearance to fibroma, differing in its softer consistence and more irregular surface.

Sometimes the foramen cæcum is prolonged into a canal, running backward (ductus excretorius linguæ). Into it empty numerous mucous glands. At times it extends to the hyoid bone. Dermoids can arise from this canal, also from branchial fistulas. Thyroid dermoids or congenital adenomata may occur, arising from obsolete parts of the digestive tract. They resemble the thyroid gland in structure. To this group belong the so-called accessory thyroids.

Carcinoma of the base of the tongue is almost never primary, and is very rare in any case. It does occur secondarily. Sarcoma is rarer than carcinoma, and is usually an extension from surrounding parts.

**A Case of Laryngeal Growth.** (*Journal of the Amer. Med. Association*, April 30, 1892.)—Dr. F. C. Raynor reports the following interesting case: A girl of twelve years complained for six months of hoarseness, slight cough, and dyspnoea on exertion. A papillomatous growth was found on the right vocal cord, near the anterior commissure. After ineffectual attempts to create tolerance to instruments in the larynx, the writer finally succeeded in removing part of the growth with Mackenzie's cutting forceps. Subsequent attempts were made, with slight results. Then insuffla-



tion of salicylic acid with powdered acacia, one part to three, was used. The applications were well borne as a rule, but finally, during an application, the patient became cyanotic and tracheotomy became necessary. About ten days later chloroform was administered, thyrotomy performed, and the growth removed with forceps, scissors, and curette. Recovery was uneventful.

About three months later the patient was taken with sore throat and dyspnoea. The laryngoscope showed general congestion and irregular thickening of the tissues. Dyspnoea was relieved by intubation. The patient developed phthisis pulmonalis, and died four months later during a severe attack of dyspnoea.

A tuberculous deposit rather than papillomata was probably the cause of the final obstruction. A removal of the larynx was not allowed.

**The Operative Treatment of Diphtheria in Fürth in 1874-1892.** (*Münchener Med. Wochens.*, April 5, 1892.)—Dr. Wilhelm Mayer collected all the tracheotomies—three hundred and sixty in number—made in Fürth during the above period. There were one hundred and sixty-six boys, and one hundred and thirty-nine girls (sex not stated in eleven cases). Of these were cured one hundred and three (thirty-two and a half per cent.).

The operations are generally done in the last stages of suffocation. The writer operates for euthanasia in a hopeless case. If an early operation is permitted it should be done. The writer has performed inferior tracheotomy thirty-one times. The operation was fairly easy in about one-third of these. Artificial respiration will usually clear the trachea of membrane, mucus, and blood. The catheter is seldom used by the writer. In one case, where the child was expiring after tracheotomy, curetting the trachea removed the dyspnoea, and the child recovered. The writer does not favor intubation.

**Chancre of the Lip.** (*Lancet*, April 16, 1892.)—Stephen Paget gives an instructive review of the literature of this subject. Chancre of the lip may occur at any time of life. The ways of acquiring it are numerous, apart from immediate infection. Any object which is put to the mouth can carry the poison. It is the most common of all the extra-genital or erratic chancres, forming probably one-third of such cases. The proportion of chancres of the lip to those of the generative organs varies much according to the class of cases considered. Most statistics make the proportion a very small one. In most cases there is nothing amiss with the lip at the time of inoculation, but sometimes the poison takes advantage of a fresh or old crack or fissure. Coincident chancres of the lip and the generative organs, or the tongue, the finger, or the nipple have been recorded.

In infants chancre of the lip is often overlooked, and the disease called hereditary. It may be acquired from a syphilitic nipple or from a toy, first put by the nurse to her own mouth. It is a superficial lesion which soon

disappears. To make sure of the diagnosis, enlarged lymphatic glands must be looked for.

In adults chancre of the lip is most common between twenty and forty. Most writers say it is more common in women, but a few say in men. In appearance it resembles chancres elsewhere. It varies considerably in size, and may be round, oval, or linear, in the last case probably starting in a fissure. The glands enlarge within three weeks of the first appearance of the sore and may attain great size. The submaxillary, the cervical, and even the axillary glands may become affected. The glands remain distinct, but may be painful in feeble persons or if the chancre is inflamed. Under irritative local treatment the lip may swell greatly and become painful. The sore may heal without a scar, or a faint one may remain. Chancre of the lip will probably be followed by syphilis of at least the average severity.

Some Nasal, Throat, and Aural Symptoms and Disorders met with in Influenza. (*New York Medical Journal*, April 16, 1892.)—Dr. Beverly Robinson mentions one case of influenza in which the initial stage was ushered in by repeated epistaxis, although the patient had never had it before. There is apparently more local pain in the sore throat of influenza than in the ordinary variety. In follicular tonsillitis, occurring in this disease, there was a tendency to recurrence with occasional severe paroxysms of pain in the tonsillar region. The writer's aural cases usually occurred in patients whose ears were previously healthy. Occasionally the laryngeal inflammation is most pronounced with none or very little in the nose or pharynx. In some cases of a most rebellious and painful cough the local signs were very slight. At times local artificial irritation in the larynx would relieve it. There may be some paralysis in the muscles of the throat on convalescence, also neuroses of sensations. Choreic movements and spasmodic conditions in the larynx are rare and late sequelæ.

In treatment the writer uses a tablet made by Fraser, consisting of citrate of caffeine, one-half grain; phenacetin, one grain; salicylate of ammonium, three grains. One is given every one, two, or three hours, according to age, depression, and general disturbance. One or another ingredient can be omitted according to circumstances. In the early stages of laryngitis, steam inhalations, with turpentine and compound tincture of benzoin, followed later by dry pine-needle-oil vapors from a perforated zinc inhaler, are of great value.

Euphoren in the Treatment of Nose and Throat Diseases. (*Medical Record*, April 23, 1892.)—Dr. W. F. Chappell highly recommends euphoren in powder in cases of rhinitis fœtida. Fifteen cases thus treated seem permanently cured after a month's cessation of treatment. Three of the cases were treated every day for four months. The parts are first cleansed with a half-per-cent. solution of creolin and then covered thickly



with euphoren from a powder-blower. This was done every morning, and at night an ointment of euphoren, 3ii, vaseline, 3i, was applied with a brush. It is too soon to say whether the benefit will be permanent, but the prospect seems encouraging. Euphoren is of great value after operations on the throat and nose, on account of its hæmostatic and antiseptic properties.

## DERMATOLOGY.

IN CHARGE OF WILLIAM A. HARDAWAY, A.M., M.D.,  
Professor of Diseases of the Skin in the Missouri Medical College, St. Louis.

Three Kinds of Favus. (*British Journal of Dermatology*, May, 1892, p. 139.)—Dr. P. G. Unna relates the results of his experiments with the three species of favus made on human beings and animals. The appearance of two forms of the disease is graphically represented in an accompanying chromolithograph. He sums the differences up as follows:

1. The scutula of Favus I. were less numerous and less accurately concentric than those of Favus III.; some, in fact, presented only semicircles. The latter variety evidently favors the formation of perfect scutula.

2. The scutula of Favus I. has a grayish-yellow color, whereas those of Favus III. were of a dark sulphur-yellow. The former at once reminded us of the grayish-yellow color usually exhibited by the favus of mice.

3. The scutula of Favus I. were much softer and more friable than those of Favus III. These latter could, therefore, be easily removed intact from their pits with a blunt instrument, whereas those of Favus I. always broke down.

4. The scutula of Favus I. were more firmly attached to their horny substratum than those of Favus III., owing to which the difficulty of removing them intact was further increased.

5. Reaction made its appearance quicker with Favus I. The inflammation was more severe in this form at both the beginning and the end of the attacks.

6. There was greater pain associated with the initial symptoms in Favus I.

On account of these differences, the writer recommends that in future greater importance should be attached to the color and consistence of the scutula than hitherto.

He proposes to call the three forms of favus: Achorion euthytrix (with straight-running hairs), achorion dikroon (from the fork-like form of the hyphæ), and achorion atakton (from the irregular course of the hyphæ), respectively.

The differential diagnosis between the scutula of the three species of favus may be thus arranged in tabular form:

I. FAVUS GRISEUS.	II. FAVUS SULPHUREUS TARDUS.	III. FAVUS SULPHUREUS CELERIOR.
<i>Scutulum</i> , medium size (that of a lentil), and thick; <i>surface</i> , slightly raised or flat, not cup-shaped; <i>color</i> , grayish-yellow, like old wash-leather, no sheen or polish. It is permeated everywhere by fine and coarse hair.	<i>Scutulum</i> , very large,—covers the whole cheek,—thick; <i>surface</i> , cup-shaped, showing small elevation, and crenulated; <i>color</i> , yellowish-white, like cream; a leathery gloss, shining in spots. The hair is repressed, so that it does not perforate it.	<i>Scutulum</i> , small size (that of a pepper-corn); <i>surface</i> , cup-shaped, smooth, but no sheen; <i>color</i> , ochre-yellow at the periphery, whiter towards the centre, horny-brown along the crenated margin. The fine hair is repressed, but it is perforated by the coarse hair.

Diseases of the Skin associated with Derangements of the Nervous System. (*American Journal of the Medical Sciences*, June, 1892, p. 633.)

Dr. William T. Corlett believes that the subject of cutaneous aberrations of sensation and nutrition, due to derangements of the nervous system, does not receive the attention that its importance demands. Destructive changes in the skin, following lesions of the nerve-trunk, are fairly common, and have been put on record from time to time.

The writer relates the histories, symptoms, etc., of four cases exhibiting skin-eruptions with a strong predisposition to various neuroses in each case. He regards the eruptions in these patients as outward manifestations of a pathological condition of the trophic centres.

*First.* Because in each there was sufficient evidence of such disturbances.

*Second.* Because vaso-motor and trophic changes in the skin frequently accompany certain destructive processes in the cerebro-spinal tract. Thus, in syringo-myelia, a disease brought to light by modern research, there is a destruction of the posterior columns of the cord; as a result, there are marked trophic and vaso-motor changes in the parts over which these centres preside, and,

*Third.* Because measures alone which tended to mitigate these central disturbances improved the cutaneous lesions.

## HYGIENE AND BACTERIOLOGY.

IN CHARGE OF A. C. ABBOTT, M.D.,

First Assistant in the Laboratory of Hygiene, University of Pennsylvania.

Upon the Presence of an Antituberculosis Substance in the Blood of Animals treated by the Method of Koch. (Ueber das Vorhandsein eines gegen Tuberculose immunisirenden Principis im Blute von Thieren, welche nach der Methode von Koch behandelt worden sind. *Central-*



*blatt für Bacteriologie und Parasitenkunde*, Bd. xi., S. 82-84.) By Tizzoni and Centanni.

In the light of recent work that has demonstrated the more or less frequent presence in the blood of animals that have been rendered refractory to certain infectious diseases, of a body which possesses either curative or immunifying properties to other animals susceptible to these diseases, the authors have made a series of most interesting and important experiments.

Their publication is purely preliminary and does not give much of the detail of the work, so that only the results will be mentioned in this abstract.

They found that by the use of tuberculin a certain number of tuberculous guinea-pigs could be caused to live much longer and under better conditions of nutrition than was the case with tuberculous guinea-pigs not treated with that agent.

From the animals of this group that had given the most favorable response to the injections of tuberculin blood was drawn, allowed to coagulate, and the serum employed in other tuberculous and non-tuberculous animals, as well as upon tubercle bacilli outside the body, in order to determine what its effect would be.

Of eight animals, six of which were inoculated with tubercle bacilli that had been in contact with this serum, while two were employed as control animals and were inoculated with tubercle bacilli not exposed to the serum, five are still living and apparently healthy; one of these was inoculated six months, two five months, and two four months ago. They are all at present in good condition, though the characteristic lesions at the point of inoculation and in the neighboring glands were, during the early periods, present. Of the three animals that died one succumbed after five months with no evidence of tuberculosis in liver, spleen, or lungs. At the point of inoculation was a small amount of cheesy, purulent deposit, and cheesy nodules containing tubercle bacilli were also found in the axillary lymphatics. The remaining two control animals died of characteristic general tuberculosis, in from four to five weeks after inoculation.

Of two guinea-pigs, into the peritoneal cavity of which a certain amount (amount not given) of the serum from a tuberculous animal treated by Koch's method was injected, and twenty-four hours later inoculated with tubercle bacilli, both died, but after such a long period—one after eighteen weeks the other after seventeen weeks—that the authors feel justified in considering the result confirmatory of the belief that this serum does possess some antituberculosis principle. In both autopsies evidence of tuberculosis of the internal organs was to be seen, though in some instances it appeared as if the process was in the stage of healing. As a result of their experiments, they concluded that it is possible, even in the most susceptible animals, to bring about by the use of tuberculin a certain degree of immunity, and that this immunity depends upon the presence of an antitubercu-

lous body that is present in the serum of animals treated with this agent. It is also their belief that the immunity thus produced is due less to the action of the tuberculin *per se* than to the presence of an antidote that appears in the blood of animals after treatment by this agent. They hope by the use of this serum to demonstrate curative properties without the dangers that have attended the direct use of tuberculin.

**Tetanic Infection during the Evolution of Vaccination.** (Infección tetánica durante la evolucion vaccinal. *Crónica Médico-quirúrgica de la Habana*, 1891, No. 17.) By Ruiz.

The author reports the third case of tetanus that has occurred in Havana during the course of vaccination. It appeared in a negro infant nine months of age, and resulted presumably from the child having accidentally infected the vaccine pustule with dirt from the floor of the hut. That the organism of tetanus is commonly found in the soil is a fact now well established, and this being the case, all wounds on children should be carefully protected against the access of such infectious material.

## PATHOLOGY.

IN CHARGE OF ALLEN J. SMITH, A.M., M.D.,

Professor of Pathology in the Medical Department of the University of Texas, Galveston, Texas.

**Etiology of Dysentery.** (Zur Aetiologie der Dysenterie. *Centralblatt für Bakteriologie u. Parasitenk.*, Bd. xi., Nos. 9 and 10.) Ogata, of Tokio, Japan, after briefly describing the course and spread of the epidemics of dysentery within recent years in Southern Japan, describes a slender, short form of bacillus which he constantly found in the dejecta of the subjects of the affection, usually within the cells found in the stools. He was able to isolate from the fæces bacilli which in size, shape, and manner of staining were quite like those found directly in the stools. These micro-organisms were also found in the walls of the large intestine, but the cultivated individuals were slightly thicker than the latter. Grown on ordinary nutrient gelatin the medium was liquefied; the micro-organisms were well and permanently stained by Gram's solution. Occasionally a bacillus as large as a tubercle bacillus occurs, but, as a rule, the individuals are smaller. The ends are rounded, and usually occur in pairs like diplococci. They have active individual motion. The author's experiments are not as yet concluded, but from injections, subcutaneous and as clysters, practised upon mice, guinea-pigs, and cats, he regards these micro-organisms as probably the cause of the affection as met in the districts named. Subcutaneous injections produced in mice œdema; in guinea-pigs, a mucous diarrhœa, œdema at point of injection, ulcers and hemorrhages of the large intestine, the formation of metastatic foci in the liver and spleen, and marked swelling of the mesenteric glands. As



clysters thrown into the rectum in case of guinea-pigs and cats, as well as by feeding, the pure cultures produced a slimy, bloody diarrhoea, ulcers and hemorrhages in the large intestine, and swelling of the mesenteric glands, but no node-formation in the liver or spleen.

The author does not give any detailed description of the appearance and characteristics of the micro-organisms in question.

Upon the Pulmonary Distoma Affection in Japan. (Ueber die Lung-endistomen-Krankheit in Japan. *Virchow's Archiv*, Bd. cxxvii., H. 3.)—Yamagiwa, of the University of Tokio, contributes a *résumé* of this parasitic affection, adding the records of a single new case to the literature of the subject. The worm, *distoma pulmonis vel pulmonale*, is found, so far as is known, only in the islands of Honshu and Kiushu of the Japanese group, and to a less extent in China, Corea, and Formosa, its real home being apparently in the mountainous neighborhoods of the above Japanese isles. It is reddish in color, a centimetre in length, and is, as a rule, found in the pulmonary tissues, usually near the pleura or in the pleura, giving rise to cough, and more or less free expectoration of a dirty-reddish-colored sputum. The adult worm may occasionally find its way to the brain, or the eggs may obstruct the cerebral vessels, when, as a result, sclerotic patches are apt to be formed, giving rise to symptoms of focal epilepsy. There are on record, too, cases of hepatic cirrhosis with ascites, in which the parasites or their eggs were found deposited in the interstitial structures of the liver, apparently being the cause of the greatly overgrown connective tissues. They are apt to be found in small flat cysts, along with their eggs, or the latter may be present in the cysts alone. In the pulmonary or pleural cysts—and these are by far the most common positions for the parasite, giving rise to the name—there are usually found crystals of cholesterin and Charcot's crystals, and these with the eggs of the parasite are to be discovered in the sputum, the latter constituting the pathognomonic symptom of the affection. The disease is usually met in young and middle-aged men, and, as a rule, affects strong, robust subjects, particularly heavy drinkers. The means of entrance is not known, but is supposed to be the drinking-water. How the lungs are reached, after the parasite or its eggs are taken into the body, is an interesting but unanswered question. The author believes the latter pass from the intestinal canal to the lymphatics, thence to the venous blood, and finally are deposited in the lungs, and form the above-mentioned cysts. From the intestines through the portal circulation the eggs reach the interstitial structures of the liver; and they are also met in the fæces. The affection is usually very chronic, and, as a rule, depends for its gravity upon the occurrence of the more serious complications, the development of tuberculosis of the lungs, the involvement of the brain, etc. There is no specific method of treatment, and the author can only insist upon one thing,—prevention, by drinking only water that has been well boiled, and by eating only well-cooked food.

## CLIMATOLOGY.

IN CHARGE OF GUY HINSDALE, M.D.,

Lecturer on Climatology in the University of Pennsylvania, Philadelphia.

**Geographical Pathology: An Inquiry into the Geographical Distribution of Infective and Climatic Diseases.** By Andrew Davidson, M.D., F.R.C.P.Ed. D. Appleton & Co., 1892.

The author has embraced the entire world in his investigation. The two volumes, including one thousand pages, give in orderly arrangement a consideration of the geography, climatology, vital statistics, and pathology of one hundred and thirty-seven different countries of the globe, and constitutes a valuable work of reference. The later official returns of the statistical departments of the more enlightened nations have been used, and in their absence the author has been favored with special reports from medical men in various localities, making use at the same time of the *Archives de Médecine Naval* and medical periodicals and publications accessible in London. While acknowledging his debt to the works of Hirsch and Lombard, the author has given to his readers a work that ranks equally with the "Handbuch. der Historisch-Geographischen Pathologie" and the "Traité de Climatologie Médicale." Throughout the work the influence of temperature, of rainfall, altitude, and soil-conditions has been noted, and, as far as may be judged, the conclusions drawn are temperate and just. Statistical information published on this subject should be received with discrimination. The author repeatedly calls attention to possible errors in official statements. For example, in treating of Ceylon it is said that rickets ranks next to convulsions as the most fatal disease of infancy in that island. "In 1885 the deaths from this disease numbered four thousand one hundred and forty-five,<sup>1</sup> . . . or one thousand four hundred and sixty per million, as against the English average of twenty-two per million. I cannot help thinking that some mistake has crept into the returns, or that the term 'rickets' is used in Ceylon in a different sense from that in which it is employed in England." We cannot help wishing that Dr. Davidson might have settled the question for his readers, for such discrepancies are certainly extraordinary.

The Indian Empire, with its population of two hundred and fifty-three millions, is the subject of one of the most interesting portions of the work, to which the author has allotted one hundred and seventy-five pages.

Many strange diseases are mentioned which evidently assume great importance in distant lands. Such mysterious diseases as the *anchylostomum duodenale*, a parasitic disease, causing anæmia, dropsy, and intestinal hemorrhage, and beriberi, with which it is doubtless affiliated; frambœsia, or the yaws, an infectious disease allied to syphilis, and occurring in various

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<sup>1</sup> Administration Medical Reports, 1885, p. 122 D.



quarters of Asia and Africa; el bicho, a Brazilian disease, in which the rectum or transverse colon becomes gangrenous and exhales a putrid odor; the epidemic gangrenous stomatitis and proctitis of Fiji; negro lethargy, or the sleeping sickness of Africa, are among the affections mentioned in this work, whose nature remains unsolved, whose names even are scarcely known.

In the chapter on Brazil will be found a summary of the observations given in preceding chapters with reference to epidemic influenza. The chief features of interest are the remarks regarding its origin and extent, its rate of progress and mode of propagation, based on a study of one hundred and twenty-five epidemics of the disease.

The chapter on the United States shows careful study of published reports, chiefly those of Billings, in the tenth census, with frequent reference to the works of Hirsch, Drake, Blodget, and others.

The Holy Places of Arabia; their Water-Supply and General Sanitation. (*Lancet*, May 14, 1892.) By John Wortabet, M.D.

The local climatic and hygienic conditions of Mecca, Medina, and Jidda are described in an interesting manner. From fifty to eighty thousand Mohammedan pilgrims visit these places annually, and of those that leave India thirty-five per cent. never return. The chief causes of death are diarrhoea, dysentery, and cholera. Dr. Wortabet gives an analysis of the water at Hagar's Well, at Mecca, which shows dangerous pollution.

The Relative Humidity of the Adirondack Region. (*New York Medical Journal*, June 4, 1892.)

Dr. Winslow W. Skinner gives his own and official observations, which show that the mean relative humidity of the air in summer is seventy-three per cent., or ten per cent. higher from June to September than from December to March. Many persons have an impression that the air in the Adirondacks is particularly dry, and much disappointment ensues if one expects to find a climate comparable to that of the Rocky Mountains. But it should be remembered that moisture which comes from above is far less objectionable than that which comes from below. The excellence of the Adirondack region as a health resort is due not only to its elevation and to its lower temperature but chiefly to its rapid drainage, the purity of its atmosphere, the sparseness of its population, and the presence of immense tracts of sandy soil covered with evergreen forests.

A Plea for a National System of Sanataria. (*Medical News*, June 4, 1892.)

Dr. S. S. Wallian makes a plea for such a system, to be "conducted under one co-ordinate and co-operative management, . . . a central medical board and a local auxiliary board in every city and town of any size, these boards to be composed of progressive and representative physicians."

Dr. Wallian believes that the plan would provide better accommodations for the reception and treatment of the sick, and that fewer invalids would be sent on useless journeys. Looking backward, we find that Sir Thomas More inadvertently omitted mentioning this system in his "Utopia."

## REVIEW OF ITALIAN, SPANISH, AND PORTUGUESE MEDICINE.

IN CHARGE OF A. M. FERNANDEZ DE YBARRA, M.D.,

Corresponding Member of the Medico-Chirurgical Academy of Madrid, Spain, the Argentine Medical Circle of Buenos Ayres, South America, and the Society for Clinical Studies, of Havana, Cuba.

Contributions to the Bacteriological Study of Carbonic Acid Waters. (*Revista internazionale d'Igiene*, March, 1892.)—Dr. A. Montefusco has experimentally investigated the different carbonic acid waters manufactured at Naples, Italy, such as those of Saint-Moritz, Saint-Galmier, Apollinaris, Seltz, etc., with the object of finding out what is the action of carbonic acid gas on the pathogenic microbes. He found that it exerts no action whatever on the micro-organism of anthrax, cholera, nor that of typhus fever, although it is destructive of the saprophytic bacteria of drinking-water. The author mentions the experiments of Leone, made at the municipal laboratory of Munich, and also those of Hochstetter, Meade-Bolton, Fazio, Seala, and Alesti. The micrococcus *candicans* (Flügge) is the only micro-organism to be found sometimes in artificial Seltz water. If it is detected, however, in a sample of this water, it does not propagate itself. For instance, Dr. Montefusco found that a sample of Seltz water, which contained ten Flügge's micro-organisms per cubic centimetre, at the end of twenty days had only four or five, and in another sample they had completely disappeared. Consequently, he concludes that carbonic acid waters have a certain and destructive action on microbes; hence their hygienic property.

Experimental Researches on Mercurial Gastro-Enteritis. (*Revista clinica e terapeutica*, February, 1892.)—In a series of experiments made by Dr. P. de Miahle on rabbits, he endeavored to determine the nature of the lesions found in the digestive organs after the administration of different preparations of mercury, and which of these compounds were the least harmful. Following is his classification in an ascending order, and also the manner he introduced in the system the mercurial preparations: 1. Hypodermic injections in parenchymatous tissues with calomel, according to Sarenzio's method; 2. Albuminate or tannate of mercury by the stomach; 3. Injections of the albuminate (Miahle's formula); 4. Injections of the sublimate; 5. Administration through the mouth of the proto-iodide; 6. Van Swieten's liquor, or simple solution of the bichloride through the mouth.



The first compounds of this series did not produce any lesion, while the last ones induced in a very short time a marked fatty degeneration of the mucous glands.

**Salicylic Acid Irrigations in Diphtheria.** (*Revista de Ciencias Médicas*, Habana, February 20, 1892.)—Dr. Francisco Quiñones gives the clinical history of a case of diphtheria in a child nine years old, who was cured by irrigations of the throat with a solution of salicylic acid and water (twenty per cent. strength), and painting, firstly, with a mixture of carbolic acid and camphor, and afterwards with glycerin and corrosive sublimate. This report corroborates the good results of the treatment of that disease recently advocated by Professor Parisot, of Nancy, and published in the *Bulletin Général de Thérapeutique*.

**Masked Intermittent Forms of Malaria Poison.** (*Anales del Círculo Médico Argentino*, Buenos Ayres, January, 1892.)—Dr. J. B. Valdés sums up all the manifestations of the masked forms of paludal intoxication as follows: First, *simple masked form*, characterized by intermittent neuralgias with irregular exacerbations during the twenty-four hours, and without any febrile disturbance; second, *regular masked intermittent form*, preceded by an initial chill, with a slight febrile disturbance, followed by profuse perspiration, and accompanied by some form of neuralgia, the fever making its appearance every day at the same hour; third, *irregular masked intermittent form*, in which all these same symptoms appear at irregular times, although any one of them may occasionally be absent. In those three forms of masked malaria poisoning, the author believes the most prominent symptom is some kind of neuralgic pain. The irregular masked form is usually the one observed, and the regular form the rarest. This last is amenable to the treatment with quinine, given in large doses, six or seven hours before the paroxysm. Small and frequently-repeated doses are to be preferred in the other two forms.

**Oöphoro-Salpingectomy followed by Complementary Hysteropexia.** (*A Medicina Contemporanea*, Lisbon, January 24, 1892.)—Dr. Sabino Coelho describes a case in which he performed this exceptional operation. An ascending gonorrhœa was the origin of the disease that required surgical interference. The author speaks forcibly of latent cases of gonorrhœa in husbands believing themselves cured and infecting their wives, and refers—opposing it—to the theory of Bumm that the gonococcus only develops in cylindrical epithelium. The patient was a prostitute, twenty-four years of age, nullipara, and of good constitution. She suffered from a blennorrhagia, accompanied by hypogastric and lumbar pain, rectal and vesical tenesmus, intermittent fever, difficulty in walking, and painful copulation. A tumor of nearly fifteen centimetres in its largest diameter was located in the left iliac fossa, which, after a time, was opened, and discharged through

the rectum. The uterus was immovable and retroflexed. The amputated Fallopian tube was hypertrophied and turned around the affected ovary; it had a violet color and fleshy consistency. The ovary was of the size of a large nut, with very thin walls, and an aperture where it had adhered to the rectum.

History of the First Appearance of Yellow Fever in Pernambuco and Bahia. (*Gazeta Medica da Bahia*, October, 1891.)—This is a *résumé* of articles and documents relating to the appearance of yellow fever for the first time in the cities of Bahia and Pernambuco in 1686, and subsequently.

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#### A NEW MEDICAL COLLEGE AND HOSPITAL FOR CHICAGO.

A "CLINICAL COLLEGE OF MEDICINE AND SPECIALTY HOSPITAL" will soon be erected in Chicago, on a lot one hundred and thirty-one by one hundred and eighty-two feet, on the northwest corner of Wabash Avenue and Eda Street. It will have a frontage of one hundred and thirty-one feet on the one street and one hundred and twenty feet on the other. The entire building will consist of seven stories, basement, and attic. The basement will be fitted up with a complete system of baths, bowling alley, billiard room, smoking and amusement rooms. Two operating rooms, twenty feet square, built principally of steel and glass, with walls of enamelled brick and tiled floors, will be constructed on the eighth floor. The dispensary rooms will be on the first floor. On the second and third floors will be located the chemical, anatomical, physiological, microscopical, bacteriological, and pathological laboratories. No expense will be spared to make these complete. The greater portion of the main building will be devoted to private rooms, and the wings will be used for a number of small wards of about twenty beds each. Thus patients of all classes will be provided for according to their means. The work of construction will be commenced immediately.

The requirements for admission to this college will be of the highest grade. The applicants must either show a literary or scientific degree or pass a thorough examination. The course of study will cover thirty-six months of actual attendance in the college. It will be divided into twelve terms of three months each. The peculiar feature of this school will be that no didactic lectures will be given. The students will be divided into classes of six, so that each may receive the personal instruction of his teacher. This latter plan is an excellent one, and has been in successful operation at the University of Pennsylvania for some years and found to work with great advantage to the students where it has been introduced.

Whether or not this new medical school can dispense altogether with didactic lectures remains to be seen when the buildings are completed and the course of instruction is inaugurated.



# FORENSIC MEDICINE.

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IN CHARGE OF LORENZO D. BULETTE,  
Of the Philadelphia Bar.

## *THE RELATION OF PHYSICIAN AND PATIENT IN ITS CONFIDENTIAL ASPECT.*

THE relation of physician and patient, from a legal point of view, is both contractual and confidential,—contractual in respect of the manner in which the relation is brought about, and confidential with reference to certain implied duties of trust and confidence imposed upon the parties to the contract. These duties and restrictions are the usual legal incidents that attach to all fiduciary situations in which one of the parties, being unable to act for himself, is obliged to confide in the integrity and skill of the other, under whose power and influence, for the time being, he is to a greater or less extent. In all such cases the law scrutinizes with great jealousy the conduct of persons so situated, in order to prevent or punish any abuse of the power or influence of the one over the other.

The nature and extent of this relation between physician and patient, with the duties and liabilities incident thereto, may be best shown by a variety of illustrative cases.

In the first place, in regard to dealings or transactions, the doctrine is well settled that, where one occupies a position which naturally gives him the confidence of another, or which in any way gives him an influence, or affords an opportunity to exercise an undue influence or advantage over another, transactions between them require something more to give them validity than is necessary in other cases. The mere fact of the existence of such a relationship as naturally creates influence over the mind will lead the courts to infer the probability of undue influence having been exerted. Confidence has been held to imply the opportunity for influence, and, when established, dispenses with any more direct proof. In such cases the *onus* is cast upon the person sustaining such a relationship to establish the perfect fairness and equity of the transaction. He must show that the other acted after full and sufficient deliberation, and with all the information that it was material for him to have in order to guide his conduct, and that he had either independent and disinterested advice, or as ample protection as such advice could have given him.<sup>1</sup>

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<sup>1</sup> Clarke vs. Hawke, 9 Grant, 52.

The relation existing between a physician and his patient is one in which the probability of undue influence is inferred, and, accordingly, in their dealings with their patients the acts of physicians are watched with great jealousy,—not because the law blames and discountenances the influence flowing from such relation, but because it holds that this influence should be exerted for the benefit of the person subject to it, and not for the advantage of the person possessing it.<sup>1</sup>

Where a patient, who was aged, feeble, deaf, and of weak mind, for a small consideration bestowed all his estate upon his attending physician who lived with him and had a controlling influence over him, the transfer was set aside, the court saying that, “Owing to the relation which the parties sustained towards each other, the deed was presumptively the result of undue influence, and therefore *prima facie* void for that reason. It has been repeatedly declared by learned chancellors that the mere relation of patient and medical adviser was sufficient to avoid the contracts of the former with the latter during the continuance of such relation.”<sup>2</sup>

On the other hand, where the evidence showed that the patient’s own attorney prepared the papers; that he had independent advice and understood what he was doing, and exercised his free will, the court refused to set aside the deed, although the patient was eighty years of age.<sup>3</sup>

A physician must observe great circumspection also, if he would obtain the benefits intended, where a bequest to him is contained in the will of a grateful patient. While there is no rule of law which forbids a bequest of his property by a patient to his medical attendant, yet it is not a favorable circumstance for one in such a confidential position, with respect to a patient laboring under a severe disease, to take a large benefit under such patient’s will, more particularly if it be executed in secrecy and the whole transaction assumes the character of a clandestine proceeding. In such a case the *onus* will be very heavily upon the party benefited to maintain the validity of the will.<sup>4</sup>

In another case, after a long attendance on a patient, and when she was almost on her deathbed, the physician prepared and procured the execution of a will by which he became the principal object of her bounty, to the exclusion of her near relatives; and, as he did this without the intervention of any solicitor or other person competent to give her advice and to guard her against undue influence, the will was declared invalid.<sup>5</sup>

Again, it is a wrong for one to usurp a calling requiring special qualifications which he does not possess, or in any other way to hold out false pretensions to the public; but, in order to render this wrong actionable,

<sup>1</sup> Houghton *vs.* Houghton, 15 Beav. 299.

<sup>2</sup> Cadwallader *vs.* West, 48 Mo. 483.

<sup>3</sup> Pratt *vs.* Barker, 1 Sim. 1.

<sup>4</sup> Ashwell *vs.* Lomi, L.R. 2 P. & D. 477; Crispell *vs.* Dubois, 4 Barb. 393.

<sup>5</sup> Greville *vs.* Lyle, 7 Moore P.C. 320; Durnell *vs.* Carfield, 3 L.T. 323; Major *vs.* Knight, 4 N.C. 661.



some person must have suffered injury therefrom.<sup>1</sup> Accordingly, where an incompetent medical practitioner induces a patient to employ him and to submit to his treatment, it is such a deceit or breach of that confidence which the pretensions of the practitioner induced the plaintiff to repose in him as will give the patient a right of action against the practitioner, if injury results from his treatment.

It was likewise a breach of this confidence where a physician, from a mistaken notion of necessity, took with him, to attend a woman about to be confined in child-bed, a young, unprofessional, unmarried man, and intruded him into the privacy of the lying-in room. The patient recovered damages in an action against the physician for the deceit thus practised upon her.<sup>2</sup>

Such examples as the above constitute actionable, or at least remediable, violations of the confidential relation of physician and patient. Other conduct on the part of the practitioner may amount to a very grave breach of professional confidence and render him unworthy of trust and employment, but the patient is without legal remedy. An example of this is the disclosure by a physician of information as to the condition of his patient,—the nature and history of his disease, and the like, obtained while treating the patient professionally. For a voluntary and unnecessary disclosure by a physician of such information, the common law, while it frowns severely upon such conduct, affords no remedy to the patient. Neither is there any relief when such disclosures become necessary in the course of a judicial investigation to meet the requirements of justice; but that fact is an excuse and complete justification for the physician.

The absolute privilege from disclosure, by which all communications passing between client and attorney are shielded, has often been unsuccessfully claimed for the information imparted by a patient to his physician. It is said, and with truth, that the competent and conscientious physician does not undertake the treatment of a patient where he knows nothing of causes. It may be necessary for him to know the history of an ailment before he is able to determine the family to which it belongs, or the remedies likely to effect its cure. He requires this, and, in the mind of the patient, the alternative to disclosure may be that he will be wrongly and prejudicially treated; but the disclosure that may be useful for treatment may be damaging otherwise if placed before the public, and, if the lips of the physician are not sealed, the patient may elect to deceive him rather than to have his body cured at the expense of his liberty or his reputation. But for this, except where statutes have been passed to shield such information with the veil of privilege, the common law affords no protection to the patient.

This question as to the privilege of a physician from testifying to information of his patient obtained while attending the latter in a professional

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<sup>1</sup> Bishop on Non-Contract Law, § 717.

<sup>2</sup> *De May vs. Roberts*, 46 Mich. 160.

capacity was first decided in the Duchess of Kingston's case,<sup>1</sup> which was a prosecution for bigamy. Mr. Cæsar Hawkins, who had attended the Duchess as a physician, himself raised the objection when called as a witness, but was overruled by the lords, and compelled to testify against his patient, the prisoner. Upon being asked whether he knew from the parties of any marriage between them, Hawkins replied,—

“I do not know how far anything that has come before me in a confidential trust in my profession should be disclosed, consistent with my professional honor.” Lord Mansfield, replying for the lords, to whom the decision of his obligation to answer was referred by the Lord High Steward, said, “I suppose Mr. Hawkins means to demur to the question upon the ground that it came to his knowledge some way from his being employed as a surgeon for one or both of the parties; and I take it for granted, if Mr. Hawkins understands that it is your lordship's opinion that he has no privilege on that account to excuse himself from giving the answer, that then, under the authority of your lordships' judgment, he will submit to answer it. Therefore, to save your lordships the trouble of an adjournment, if no lord differs in opinion, but thinks that a surgeon has no privilege to avoid giving evidence in a court of justice, but is bound by the law of the land to do it (if any of your lordships think he has such a privilege, it would be a matter to be debated elsewhere); but if all your lordships acquiesce, Mr. Hawkins will understand that it is your judgment and opinion that a surgeon has no privilege, where it is a material question in a civil or criminal cause, to know whether parties were married, or whether a child was born, to say that his introduction to the parties was in due course of his profession, and in that way he came to the knowledge of it. I take it for granted that if Mr. Hawkins understands that, it is a satisfaction to him, and a clear justification to all the world. If a surgeon were voluntarily to reveal these secrets, to be sure he would be guilty of a breach of honor and of great indiscretion; but to give that information in a court of justice, which by the law of the land he is bound to do, will never be imputed to him as any indiscretion whatever.”

In many of the States the same privilege accorded to the communications of a legal adviser have also been extended by statute to medical, and in some cases even to spiritual, advisers.

The illustrative cases here presented serve not only to show the varied phases in which the confidential relation of physician and patient manifests itself, but also to define the limits within which a failure to observe the legal duties and restrictions thereby imposed will subject the practitioner to a liability enforceable by its appropriate legal remedy.

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<sup>1</sup> 20 How. State Trials, 572 (1776).





## BOOK REVIEWS.

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DISEASES OF THE NERVOUS SYSTEM. By J. A. Ormerod, M.D. Oxon., F.R.C.P.  
London. Philadelphia: P. Blakiston & Co., 1892.

This is an excellent introduction to the study of neurology. It contains chapters on nervous anatomy and physiology, morbid anatomy, general symptoms, symptoms referable to the special organs, and, finally, special diseases. In the discussion of the latter, the disadvantages of extreme brevity are apparent. Epilepsy, for example, cannot be properly studied in nine pages. Only main facts and general rules can be given, exceptions cannot be noted. For instance, no reference is made to the very rare, yet certainly existing, cases of idiopathic epilepsy in which consciousness is not even momentarily lost. Strychnic convulsions and tetanus are not even mentioned. Rare diseases and pathological curiosities are purposely and properly omitted. Treatment is considered in a very sketchy manner. No careful or explicit directions are given which would enable one, without recourse to other books, to carry a case from beginning to end.

For the beginner, who is frightened by the size of the larger manuals, and for the man who wishes a general knowledge of neurology, we can commend the book. The paper, type, illustrations, and binding are good and neat.

C. B.

EPIDEMIC INFLUENZA: NOTES ON ITS ORIGIN AND METHOD OF SPREAD. By  
Richard Sisley, M.D., Member of the Royal College of Physicians of London.

These notes were originally intended to become part of a treatise on influenza, but they have been published in their present form without delay, in order to arouse the profession to take every precaution to prevent the spread of the disease. The publishers, Messrs. Longman, Green & Co., of London, have prepared the book neatly and artistically. The complete index will be of great assistance in finding those points which may be of special interest to the reader. After devoting a chapter each to the nomenclature of influenza and to a correct definition of the disease, the writer gives some little space to the origin of the epidemic. The greater portion of the book, however, is utilized for bringing forward all the available evidence to prove the contagiousness of the disease. One chapter is devoted to influenza in animals. Mr. Caird believes that influenza may be communicated from horses to cats and to man. Another observer that it can be communicated from man to cats, and from one cat to another. Dr. Sisley is a firm believer in the contagious nature of influenza, and advocates its being included among the diseases of which notification is compulsory. He believes that a great many lives might have been saved and much suffering prevented if the proper precautions had been taken to prevent the spread of the disease. While this book shows evidence of considerable labor, it is to be regretted that the time employed was not sufficient for the writer to prepare an exhaustive monograph on the subject, with a bibliography complete up to the date of publication. While the points that the writer wants to insist upon are well brought out and emphasized repeatedly, the subject matter is too verbose to make it interesting reading. All that has been said could have been written in one-quarter of the space.

J. P. T.

**BACTERIOLOGICAL DIAGNOSIS: TABULAR AIDS OF USE IN PRACTICAL WORK.**

By James Eisenberg, Ph.D., M.D., Vienna. Translated and augmented with the Permission of the Author from the Second German Edition, by Norval H. Pierce, M.D., Surgeon to the Out-Door Department of Michael Reese Hospital, Assistant to Surgical Clinic, College of Physicians and Surgeons, Chicago, Illinois. Philadelphia: F. A. Davis, 1892.

With the ever-increasing number of recognized micro-organisms, and their growing importance in arriving at a correct diagnosis, such books as this become of more and more practical use. The extent of this subject is shown by the number of bacteria and fungi described in the text, the last one described, on page 160, numbering one hundred and thirty-eight. The great advances which have been made in this field of study and the great promise it offers for future discoveries justify the translator in believing that "there are richer and more wondrous truths lying hidden in this direction than have as yet been dreamed of."

The simple division has been followed which divides the subject into three parts, —namely, (1) non-pathogenic bacteria: (*a*) those liquefying gelatin; (*b*) those not liquefying gelatin; (2) pathogenic bacteria: (*a*) those cultivated outside the animal body; (*b*) those not cultivated outside the animal body; and (3) fungi. Each bacillus, or micro-organism, is allowed a page for a short description of the place where it is found, its form and arrangement, motility, growth (in gelatin, agar-agar, potatoes, and blood serum), the temperature at which it thrives, the rapidity of growth, spore formation, aerobiosis, gelatin reaction, color production, etc. Where the fact is known the name of the observer who first described the microbe is given together with a reference to his article. It sometimes happens that more than one observer is credited with an early description or study of the micro-organism. Thus with the plasmodium malarie: credit is given to Lavarán, Marchiafava, Celli, Guarnieri, and Osler. In translating the original German text has not been followed quite as closely as it might have been, and the fact that a third German edition of the work appeared in 1891, while this work is a translation of the second edition, will interfere somewhat with the introduction of the book.

J. P. T.

**THE PHYSICIAN AS A BUSINESS MAN.** By J. J. Taylor, M.D. Philadelphia, 1891.

This little book will interest those in the profession who realize their lack of those business qualifications necessary to carry on successfully the financial department of their work, as their training unfits them to view their profession from a business point of view. That we all suffer pecuniarily in consequence is universally recognized; and therefore a book of this character furnishes interesting and suggestive reading to many busy practitioners.

J. D.

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EDITOR.













